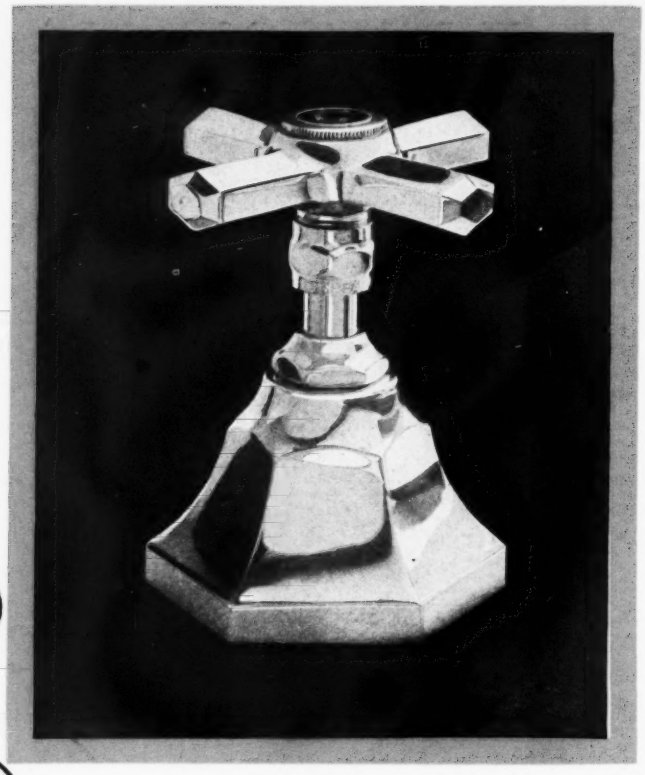
OHIO STATE
UNIVERSITY
OCT 2 1928
LIBRARY

DOMESTIC ENGINEERING

The Plumbing and Heating Weekly

Plumbing *meets eighteen-hundred-year test*

SEPTEMBER 29, 1928



Every woman responds to BEAUTY

It is human nature for every woman to want her home beautiful as she can make it. She takes a real pride in having things which her guests admire.

Here's one way to let this very human desire build a highly-profitable end of your business.

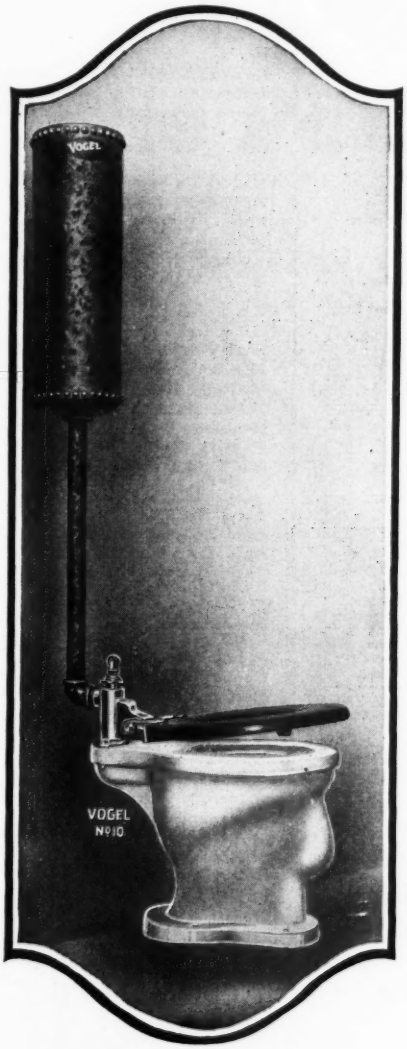
Every time you see worn, tarnished fixtures on lavatory, bath or shower tell the housewife about them. Let her see for herself what an enormous difference the brilliant new Speakman Artline fixtures make.

Have you seen them? They are in sparkling chromium-plate. They never tarnish and never need polishing. They are next to a diamond in hardness. They have the brilliancy of silver, the richness of platinum and the quality that has made Speakman famous.

Show them. You won't have to talk much to sell this bathroom jewelry.

SPEAKMAN COMPANY WILMINGTON, DEL.

SPEAKMAN
SHOWERS & FIXTURES



VOGEL *Number Ten Closet*

ST. LOUIS, MO. WILMINGTON, DEL.

A Real Vogel Message

Here is a **VOGEL** message that we want you to note carefully. Just as **VOGEL** Products on the job give the kind of service you want your customers to have so too we want to impress upon you that we will give you the same service. Every help we can give, is yours for the asking, any problem we can solve we will gladly do so if it will help you to make bigger **VOGEL** Profits for yourself.

We want you to know that **VOGEL** Frost Proof Hydrants and Closets and **VOGEL** Number Ten Seat Action Closets are really in demand because they fill an essential place in customers' needs. Let us help you help yourself.

Jovo

Jos. A. Vogel Co.

Wilmington, Del. **St. Louis, Mo.**

VOGEL PATENTED

Advertisers This Week

Air Reduction Sales Co.... 73
Alberene Stone Co..... .....Inside Back Cover
Armstrong Bros. Tool Co.. 74
Aurora Pump Co.....103
Automatic Gas-Steam Radiator Co. 104

Badger & Sons Co., E. B... 80
Balmer Co., J. H.....52 and 53
Bareham & Saunders..... 81
Barnes Tool Co., Inc., The. 68
Beaton & Cadwell Mfg. Co. 34
Benson Co., Inc., Alex R....103
Bignall & Keeler Machine Works 99
Borden Co. 72
Bridgeport Brass Co..... 11
Brunswick-Balke-Collender Co. 72
Buffalo Forge Co..... 87
Built-Well Mfg. Co..... 94
Bullard Specialty Co..... 94
Burnham Boiler Corp..... .....Back Cover

Caloroil Burner Corp..... 89
Capitol Brass Works..... 79
Central Brass Mfg. Co..... 82
Chicago Faucet Co..... 76
Chicago Pipethread Machine Co. 93
Cleveland Gas Burner & Appliance Co. 58
Clow & Sons, Jas. B..... 38
Columbia Radiator Co..... 79
Crampton-Farley Brass Co. 94

Decatur Pump Co..... 85
Dole Valve Co..... 49
Donnelly Mfg. Co..... 77
Duriron Co., The..... 96
Duro Co. 76

Eagle-Picher Lead Co..... 82
Eastern Foundry Co..... 86
Enterprise Brass Works... 93
EverHot Heater Co..... 5

Fitzgibbons Boiler Co..... 47
Flagg & Co., Stanley G.... 86
Fulton Sylphon Co..... 79

Goodell-Pratt Co. 104
Grabler Mfg. Co..... 37
Grand Haven Brass Fdy...102

Haas Co., Philip..... 82
Hall-Will, Inc. 94
Hanson Bros. Scale Co.....103
Healy-Ruff Co. 100
Heggie-Simplex Boiler Co.. 79
Hotel Adelphia 104
Hotstream Heater Co..... 72
Hutchison Regulator Sales Corp. 85

Imperial Brass Mfg. Co.... 74

Jenkins Bros. 75

DOMESTIC ENGINEERING

The Plumbing and Heating Weekly

Established 1889

Published Every Saturday by

Domestic Engineering Company

1900 Prairie Avenue, Chicago

Address all Correspondence to Chicago Office
Long Distance Telephone: Calumet 4680
New York Office, Room 906, 110 East 42nd Street
Telephone: Ashland 8111 and 8112
Cleveland Office, Builders' Exchange
Telephone: Main 4000
Philadelphia Office, Room 1507, Finance Bldg.
Telephone: Rittenhouse 2285
Pittsburgh Office, Room 604, Chamber of Commerce Bldg.
Bell Phone: Atlantic 8741-8746

Chicago, September 29, 1928
Vol. 124, No. 13 Whole No. 1868

EDITORIAL STAFF
F. P. Keeney, Editor
R. V. Sawhill, Managing Editor
R. Herlov, L. B. Spafford, Chas. E. Price,
L. W. Britton, W. H. Oleson,
L. H. Gray, G. R. Stearns, Jas. E. Ramage,
Associate Editors

ADVERTISING REPRESENTATIVES
E. DeForest Winslow O. T. Carson F. S. King
E. G. Hutchison R. Payne Wettstein Wallace J. Osborn
H. J. Carr D. M. Kenney Robert A. Jack
J. S. Crane R. H. Partenfelder A. T. Papineau

TERMS OF SUBSCRIPTION
United States and Possessions, $2.00 per year.
Current copies, 10c each. Back numbers, 25c each.
Canada, $2.00 per year. Foreign, $3.00 per year.

Entered as Second Class Matter on February 20, 1893, at the Post Office at Chicago, Illinois, Under the Act of March 3, 1879.

Copyright 1928, by Domestic Engineering Company.

Member of Audit Bureau of Circulations.
Member of Associated Business Papers, Inc.

More Than 20,000 Copies of This Issue Are Being Printed and Distributed

Leading Articles in This Issue

Launching the New Store. Page 18.
A Condensing Tank Problem. Page 24.
Plumbing—Meets Eighteen-Hundred-Year Test. By A. D. Guion. Page 26.
Gas Refrigeration. Article No. 2. Page 29.
Which of These Remodeling Jobs Do You Like Best? Page 45.
Will the Plant Provide Enough Heat? Page 54.

Special Departments

Between Ourselves. Page 15.
Editorials. Page 17.
Lead—Its Story and Its Uses. Page 44.
Questions and Answers. Page 57.
Markets—Business Reports from Large Jobbing Centers. Page 61.
Retail Advertising Service. Page 66.
Letters to the Editor. Page 68.
This Week—Among Manufacturers, Wholesalers and Salesmen. Page 69.
Convention Dates. Page 81.
The Trade—News for Plumbing and Heating Contractors. Page 83.
Woman's Page. Page 91.
Plumbing and Heating Patents. Page 99.

Advertisers This Week

Kemp Mfg. Co., C. M..... 78
Kewanee Boiler Corp..... 72

Lawson Mfg. Co.....103
Leader Specialty Co., Inc...105
Leonard-Rooke Co. 102

Maddock's Sons Co., Thos.. 33
McDonnell & Miller..... 90
McShane Bell Fdy. Co.....100
Milwaukee Valve Co..... 41
Mohawk Septic Tank Co... 85
Myers & Bro. Co., F. E.... 76

Nash Engineering Co..... 65
National Lead Co...50 and 100
National Radiator Corp.... 12
Nelson Corp., Herman..... 67
Neptune Meter Co..... 73
Novelty Steam Boiler Wks. 85
Nye Tool & Machine Wks.. 13

Ohio Brass Co., The..... 55
Ohio Heater Co..... 48

Pacific Steel Boiler Corp. of Illinois 10
Penberthy Injector Co..... 77
Penna. Range Boiler Co.... 90
Perfection Stove Co.....106
Phoenix Brass Fdy..... 74

Richmond Fdy. & Mfg. Co., Inc. 76
Richmond Radiator Co..... 7
Robertshaw Thermostat Co. 92
Rundle Mfg. Co..... 71
Russell & Co., W. A..42 and 43

Semler Co. 82
Shaw-Perkins Mfg. Co..... 98
Sheer Co., H. M..... 99
Simplex Mfg. Co..... 90
Sloan Valve Co..... 60
Smooth-On Mfg. Co..... 95
Speakman Co..... .....Inside Front Cover
Stack Heater Co..... 80
Standard Sanitary Mfg. Co. .....30 and 31
Star Dee Water Heater Co. 56

Taber Pump Co..... 90
Titchener Co., E. H.....101
Toledo Pipe Threading Machine Co. 16
Trenton Brass & Mach. Co. 87

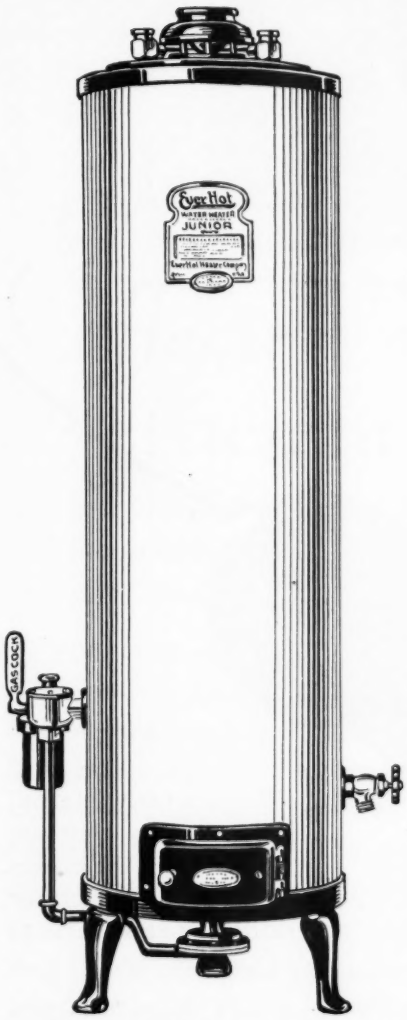
Vogel Co., Jas. A..... 3

Wade Iron Sanitary Mfg. Co. 100
Wise, Inc., J. B..... 14
Wolf Co. 74

Zurn Mfg. Co., J. A..... 6

"HOORAY"

The Policy is Winning



For eight years the EverHot has been sold through the plumbing trade only. It has been a real struggle in a great many cases during the past eight years to cause some plumbers to see the importance of supporting the manufacturer that supports the plumbing trade.

After an eight-year fight to cause automatic water heaters to be sold through the plumbing trade only, EverHot is getting real results. As never before, the plumbers all over the United States are getting behind the

EverHot
AUTOMATIC
WATER HEATER

85% Efficient in the use of gas
100% Efficient in making friends

Sold Through the Plumbing Trade Only—
and We Don't Mean "Maybe"

EverHot Heater Company

5211 Wesson Avenue :: Detroit, Michigan

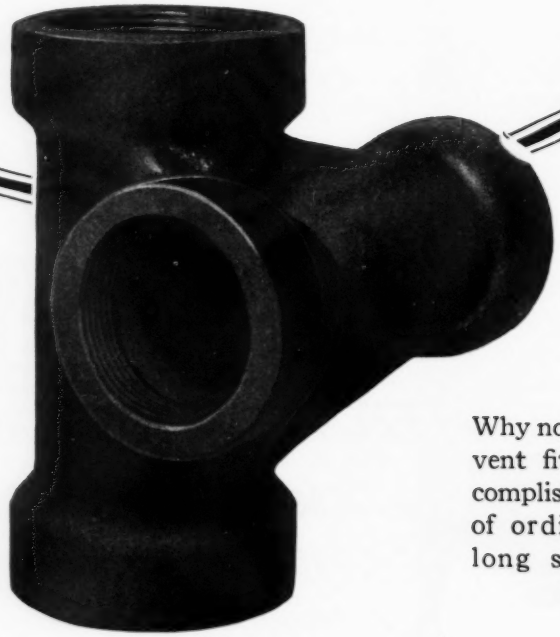
NIAGARA

WASTE AND VENT FITTINGS

No. 4

of a series of reasons why you should use Niagara Waste and Vent Fittings

The branch wastes are vented at the crown preventing self-siphonage of the fixture traps



The Venting of "Niagara" Fittings at the crown was one of the big factors that made and still makes them preferred by discriminating contractors.

Why not use waste and vent fittings that accomplish all the effects of ordinary short or long sweep fittings in one?

Patent Pending

WRITE FOR BOOKLET SHOWING COMPLETE LINE, INCLUDING TYPICAL INSTALLATION DRAWINGS AND DIMENSIONS.

J. A. Zurn Manufacturing Co., Erie, Pa.

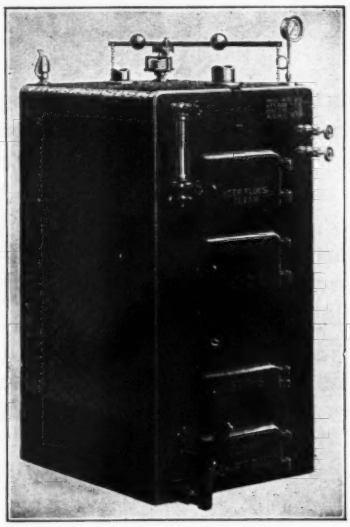
SALES OFFICES IN THE FOLLOWING CITIES:

NEW YORK CHICAGO PITTSBURGH BOSTON LOS ANGELES SEATTLE
CHATTANOOGA MINNEAPOLIS DENVER SAN JUAN, PORTO RICO

SANI-TEED

PLUMBING PRODUCTS

MADE FROM VIRGIN METAL



Effective outside.... efficient inside!

The new "Richmond Model" boiler combines the unsurpassed features of the original "Model" with the beauty of modern design

A FRONT feed boiler that incorporates the exclusive features that made the Richmond "Model" side feed an acknowledged leader. ¶ Low water line; built in vertical sections which are insulated with asbestos millboard; maximum of direct fire surface, and a free flue travel. These are a few of the outstanding features of this new boiler. ¶ A modern boiler in appearance. The straight lines of its design and the finish of dull black and gold are unequalled for dignified attractiveness. ¶ This new boiler is made in three popular sizes—15″, 22″, and 36″ grate widths. Data on construction, ratings, etc. is now in published form.

RICHMOND RADIATOR COMPANY

INCORPORATED

1480 BROADWAY, NEW YORK

Gas Boiler Division, 2220 Chestnut St., Philadelphia, Pa.

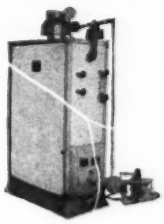
Branch Offices: Chicago Philadelphia Boston Cleveland

Factories { Heatomat—Enameled Ware—Radiators . . UNIONTOWN, PA.
Steam and Hot Water Boilers . . . . . NORWICH, CONN.

The RICHMOND name is a guarantee of finest quality

The slightest construction detail, the smallest metal part, must pass the most rigid inspection before it becomes a part of any product bearing the name "Richmond".

RICHMOND HEATOMAT GAS BOILER



The design, safety of operation and efficiency of the Heatomat Gas Boiler is fully approved by the A. G. A. Designed for use in homes, apartment houses, and commercial buildings. A labor-saving, cost-saving equipment which is extremely profitable for dealers. Write for the facts.

RICHMOND ENAMELED WARE

First quality only—no seconds. The complete line includes Sinks, Wall and Pedestal Lavatories, Corner Recess and Roll Rim Baths, Combination Sinks and Laundry Trays. Send for complete catalog.

RICHMOND RADIATORS

In beauty of design the Richmond Radiator is second to none. In efficiency it is unequalled. The U. S. Bureau of Standards recently tested certain Richmond Radiators and their ratings exceeded ours by as much as 8½%. There is 5% to 10% greater value in Richmond radiation. Let us tell you why.

RICHMOND RADIATOR COMPANY
1480 Broadway, New York

You may send me catalogs and details of the items checked.

.....Steam & Hot Water Boiler .....Radiators
.....Heatomat Gas Boiler .....Enameled Ware

Name.....

Address.....

D. E. 9-29

Catalog Sheets for

Co-operating with the Plumbing and Heating Industries Catalog Standardized Movement, Plumbing and Heating Contractors who are equipping loose-leaf binders, will be furnished by "Domestic Engineering," upon request, catalog sheets of the manufacturers listed below.

These loose sheets are reprints of catalog pages appearing in "Domestic Engineering Catalog Directory." They are standard catalog page size — 8½x10⅝ inches — are printed on a good grade of light paper and punched to fit the standardized binder distributed thru the Plumbing and Heating Industries Bureau.

If you are assembling a working catalog from standardized catalog sheets, write Domestic Engineering Co., 1900 Prairie Avenue, Chicago, on your letterhead, giving the names of concerns listed below whose lines you are interested in, and we shall be glad to send you the sheets without charge. If you are not using the standardized sheets and binder and wish further information write to the Plumbing and Heating Industries Bureau, Pure Oil Building, 35 E. Wacker Drive, Chicago, Illinois.

Abendroth Bros. ..... Port Chester, N. Y.
Absolute Con-Tac-Tor Corp ..... Elkhart, Ind.
Acme Asbestos Covering & Flooring Co. ..... Chicago, Ill.
Acme Frost Proof Closet Mfg. Co. ..... Baltimore, Md.
Albrass Co. ..... Coxsackie, N. Y.
Allen Mfg. Co., W. D. ..... Chicago, Ill.
Alliance Tank Co. ..... Alliance, Ohio
American Beauty Stove Co. ..... Erie, Pa.
American Brass Co. ..... Waterbury, Conn.
American Manganese Bronze Co. ..... Holmesburg, Pa.
American Pipe Tool Co. ..... Chicago, Ill.
American Radiator Co. ..... Chicago, Ill.
American Steam Pump Co. ..... Battle Creek, Mich.
Armstrong Bros. Tool Co. ..... Chicago, Ill.
Armstrong Mfg. Co. ..... Bridgeport, Conn.
Artisan Metal Products Co. ..... Charlestown, Mass.
Atchison Specialty Mfg. Co. ..... Atchison, Kans.
Atlantic Tubing Co. ..... Providence, R. I.
Atlas Brass Foundry Co. ..... Columbus, Ohio
Automatic Gas Steam Radiator Co. ..... Pittsburgh, Pa.

Badger & Sons Co., E. B. ..... Boston, Mass.
Ballantine, B. D. ..... Fitchburg, Mass.
Baltimore Valve Corp ..... Baltimore, Md.
Barnes Tool Co., The ..... New Haven, Conn.
Barrett Mfg. Co., James ..... Boston, Mass.
Bay Ridge Specialty Co., Inc. ..... Trenton, N. J.
Bead Chain Mfg. Co. ..... Bridgeport, Conn.
Beaton & Cadwell Mfg. Co., The ..... New Britain, Conn.
Beaton & Corbin Mfg. Co., The ..... Southington, Conn.
Becker Mfg. Co., The ..... Marietta, Ohio
Beilman Water Heater Co., Inc., The ..... Buffalo, N. Y.
Bell & Gossett Co. ..... Chicago, Ill.
Beneke Mfg. Co. ..... Chicago, Ill.
Benson Co., Inc., Alex R. ..... Hudson, N. Y.
Berbecker & Rowland Mfg. Co. ..... Waterville, Conn.
Bignall Co., The ..... Medina, N. Y.
Black & Decker Mfg. Co. ..... Towson, Md.
Blue Seal Chemical Co. ..... Roselle, N. J.
Boosey Mfg. Co., Norman ..... Detroit, Mich.
Borden Co. ..... Warren, Ohio
Bradley Washfountain Co. ..... Milwaukee, Wis.
BRE Mfg. Co. ..... Boston, Mass.
Bridgeport Brass Co. ..... Bridgeport, Conn.
Brunswick-Kroeschell Company ..... Chicago, Ill.
Buckeye Pump & Mfg. Co. ..... Columbus, Ohio
Buffalo Gas Radiator Corp. ..... No. Tonawanda, N. Y.
Buffalo Meter Co ..... Buffalo, N. Y.
Burkert Co., Inc., R. N. ..... Trenton, N. J.
(Formerly Trenjer Specialty Co.)
Burnham Boiler Corp. ..... Irvington, N. Y.
Butler Mfg. Co. ..... Minneapolis, Minn.
Butler, Thos. F. ..... Lorain, Ohio

Cabco Iron Works, Inc. ..... Gowanda, N. Y.
Capitol Brass Works ..... Detroit, Mich.
Carty & Moore Engineering Co., Inc. ..... Detroit, Mich.
Case & Son Mfg. Co., W. A. ..... Buffalo, N. Y.
Celina Mfg. Co. ..... Celina, Ohio
Central Foundry Co. ..... New York City
Central Radiator Co. ..... New York City
Central Specialty Co. ..... Detroit, Mich.
Chamberlain Co., The ..... Pittsburgh, Pa.
Chemical Toilet Corp. ..... Syracuse, N. Y.
Chicago Faucet Co., The ..... Chicago, Ill.
Chicago Flexible Shaft Co., (Sprinkler Division) ..... Chicago, Ill.
Chicago Granitine Mfg. Co. ..... Chicago, Ill.
Chicago Pipethread Machine Co. ..... Racine, Wis.
Chipman Chemical Engineering Co., Inc. ..... Bound Brook, N. J.
Cleveland Brass Mfg. Co., The ..... Cleveland, Ohio
Cleveland Heater Co. ..... Cleveland, Ohio
Columbia Radiator Co. ..... McKeesport, Pa.
Comet Radiator Co. ..... Philadelphia, Pa.

Commonwealth Brass Corp. ..... Detroit, Mich.
Compound Injector & Specialty Co. ..... Chicago, Ill.
Conemaugh Iron Works ..... Latrobe, Pa.
Consolidated Ashcroft Hancock Co., Inc. ..... New York City
(Division of Manning, Maxwell & Moore, Inc.)
Coyne & Delaney Co. ..... Brooklyn, N. Y.
Crampton-Farley Brass Co. ..... Kansas City, Mo.
Crist & Schilken Co. ..... Pittsburgh, Pa.
Crocker Chair Co. ..... Sheboygan, Wis.
Croll & Son, Jesse G. ..... Philadelphia, Pa.
Crowell, F. G. ..... Buffalo, N. Y.
Crown Die & Tool Co. ..... Chicago, Ill.
Curtin Valve Co., A. F. ..... Medford, Mass.
Curtis & Curtis Co., The ..... Bridgeport, Conn.
Curtis Specialty Co. ..... Salt Lake City, Utah

Dahlquist Mfg. Co. ..... South Boston, Mass.
Dail Steel Products Co. ..... Lansing, Mich.
Dart Mfg. Co., E. M. ..... Providence, R. I.
Dash Mfg. Co. ..... New York City
Davis Engineering Corp. ..... New York City
Decatur Pump Co. ..... Decatur, Ill.
Dececo Co., The ..... Boston, Mass.
D'ESTE Co., Julian ..... Boston, Mass.
Detroit Lubricator Co. ..... Detroit, Mich.
Detroit Range Boiler & Steel Barrel Co. ..... Toledo, Ohio
Dick Brothers, Inc. ..... Reading, Pa.
Dixie Flashing Co., Inc. ..... Birmingham, Ala.
Dixie Metal Products Co., Inc. ..... Birmingham, Ala.
Dole Valve Company ..... Chicago, Ill.
Donley Mfg. Co., The ..... Cleveland, Ohio
Donnelly Mfg. Co. ..... Malden, Mass.
Dube Boiler Co. ..... Chicago, Ill.
Dunham Co., The ..... Berea, Ohio

Eastern Foundry Co., The ..... Boyertown, Pa.
Ebinger Sanitary Mfg. Co., D. A. ..... Columbus, Ohio
Economy Heater Co. ..... Chicago, Ill.
Economy Pumping Machinery Co. ..... Chicago, Ill.
Eljer Co. ..... Ford City, Pa.
Elkhart Iron Works ..... Elkhart, Ind.
Emerson & Sack, Inc. ..... Boston, Mass.
Enterprise Brass Works ..... Muskegon, Mich.
Estabrook's Sons, R. ..... South Boston, Mass.
Evans, Morgan ..... Pittston, Pa.
EverHot Heater Co. ..... Detroit, Mich.
Everitt Co., The ..... Boston, Mass.
Excelso Products Corp. ..... Buffalo, N. Y.
Exeter Brass Works ..... Exeter, N. H.

Ferguson & Lange Foundry Co. ..... Chicago, Ill.
Fischer Spring Co., Chas. ..... Brooklyn, N. Y.
Flagg & Co., Inc., Stanley G. ..... Philadelphia, Pa.
Florence Stove Co. ..... Boston, Mass.
Forest Mfg. Co ..... Hickory, N. C.

General Brass Co. ..... Detroit, Mich.
Gerard Mfg. Co. ..... Dickson City, Pa.
Gerstein & Cooper ..... South Boston, Mass.
Gerstein & Sons, H. ..... South Boston, Mass.
Gleockle, Jr., A. F. ..... Rochester, N. Y.
Glore & Son, Inc., Evins F. ..... New York City
Goulds Pumps, Inc. ..... Seneca Falls, N. Y.
Grabler Mfg. Co. ..... Cleveland, Ohio
Grand Haven Brass Foundry ..... Grand Haven, Mich.
Graves, W. L. ..... Hatfield, Mass.
Greenfield Tap & Die Corp. ..... Greenfield, Mass.
Grinnell Co., Inc. ..... Providence, R. I.

Haas Co., Philip ..... Dayton, Ohio
Hajoca Corporation ..... Philadelphia, Pa.
Hammond Brass Works ..... Hammond, Ind.

Loose-Leaf Binder

Hays Mfg. Co. ..... Erie, Pa.
Healey Brass Foundry Co., Peter ..... Evansville, Ind.
Healy-Ruff Company ..... St. Paul, Minn.
Heap & Sons, Wm. ..... Grand Haven, Mich.
Hercules Chemical Co ..... New York City
Hetzel, J. G., Estate of ..... Newark, N. J.
Hindley Mfg. Co. ..... Valley Falls, R. I.
Hoffman Specialty Co. ..... Waterbury, Conn.
Hollands Mfg. Co. ..... Erie, Pa.
Holyoke Heater Co. ..... Holyoke, Mass.
Hotstream Heater Co. ..... Cleveland, Ohio
Hudson Brass Works, Inc. ..... Brooklyn, N. Y.
Hunt & Son, C. B ..... Salem, Ohio
Hutchison Regulator Sales Corp. ..... New York City

I-X-L Pump & Mfg. Co., Inc. ..... Philadelphia, Pa.
Ideal Pump Co. ..... Detroit, Mich.
Illinois Engineering Company ..... Chicago, Ill.
Imperial Brass Mfg. Co. ..... Chicago, Ill.
Ireland & Matthews Mfg. Co. ..... Detroit, Mich.

J. R. S. Specialties Mfg. Co., Inc. ..... Patchogue, N. Y.
Jenkins Brothers ..... New York City
Johns-Manville Corp. ..... New York City
Johnson Mfg. Co. ..... Detroit, Mich.
Johnson-Washburn Co. ..... Boston, Mass.
Jones Hollow Ware Co. ..... Baltimore, Md.
Josam Mfg. Co. ..... Cleveland, Ohio
Judd Co., H. L. ..... New York City
Juvenile Wood Products, Inc. ..... Fort Wayne, Ind.

Kainer & Co. ..... Chicago, Ill.
Kaustine Co., Inc. ..... Perry, N. Y.
Keeney Mfg. Co., The ..... Newington, Conn.
Kelly Valve Co. ..... Grand Haven, Mich.
Kemp Mfg. Co., C. M. ..... Baltimore, Md.
Kennedy Valve Mfg. Co. ..... Elmira, N. Y.
Kent Co., F. C. ..... Irvington, N. J.
Kewanee Boiler Company ..... Kewanee, Ill.
Keystone Brass Works ..... Erie, Pa.
Keystone Pottery Co. ..... Trenton, N. J.
King Union Co. Inc. ..... Providence, R. I.
Kitson Co. ..... Philadelphia, Pa.
Knott Mfg. Co. ..... Tell City, Ind.
Kokomo Sanitary Pottery Co. ..... Kokomo, Ind.
Kortick Manufacturing Co. ..... San Francisco, Cal.
Kretschmer Mfg. Co. ..... Dubuque, Iowa
Kupferle Foundry Co., John C. ..... St. Louis, Mo.

Lavelle Rubber Co. ..... Chicago, Ill.
Lawson Co., The F. H. ..... Cincinnati, Ohio
Lawson Mfg. Co. ..... Cleveland, Ohio
Leavitt Machine Co. ..... Orange, Mass.
Lehman Sprayshield Co. ..... Philadelphia, Pa.
Lehnert & Co. ..... New York City
Leonard-Rooke Co. ..... Providence, R. I.
Liquid Veneer Corp. ..... Buffalo, N. Y.
Lissberger & Son, Inc., Marks ..... Long Island City, N. Y.
Little Giant Mfg. Co. ..... Minneapolis, Minn.
Luzerne Rubber Co., The ..... Trenton, N. J.
Lytton Mfg. Corp. ..... Franklin, Va.

McCoy Mfg. Co., Inc. ..... New York City
McCaffrey Mfg. Co ..... Chicago, Ill.
McDonnell & Miller ..... Chicago, Ill.
McGurrin Supply Co. ..... Grand Rapids, Mich.
Maddock's Sons Co., Thomas ..... Trenton, N. J.
Malleable Iron Fittings Co. ..... Branford, Conn.
Manning, Maxwell & Moore, Inc. ..... New York City
Martin & Sons, H. P. ..... Owensboro, Ky.
Marvel Machine & Brass Works ..... Cleveland, Ohio
Meneley-Diederich Co., Inc. ..... Los Angeles, Cal.
Michigan Pipe Co. ..... Bay City, Mich.
Milford Iron Foundry ..... Milford, Mass.
Milwaukee Valve Co. ..... Milwaukee, Wis.
Minneapolis-Honeywell Regulator Co. ..... Minneapolis, Minn.
Misener & Irving Mfg. Co., Inc. ..... Syracuse, N. Y.
Modern Utilities Co. ..... Harrisburg, Pa.
Modine Mfg. Co. ..... Racine, Wis.
Mohawk Septic Tank Co. ..... Schenectady, N. Y.
Molby Boiler Co. ..... New York City
Morton Mfg. Co. ..... Chicago, Ill.
Muller, Edward ..... North Bergen, N. J.

Nash Engineering Co. ..... South Norwalk, Conn.
Nason Mfg. Co. ..... New York City
National Pipe Bending Co ..... New Haven, Conn.
National Steel Tank & Mfg. Co. ..... Bradford, Ill.
Neptune Meter Co. ..... New York City
Newark Brass Works ..... Newark, N. J.
Newbury & Son, Jay H. ..... Goshen, N. Y.
Newell Mfg. Co. ..... Irwin, Pa.
Northwestern Chemical Co., The ..... Marietta, Ohio
Novelty Steam Boiler Works Co. ..... Baltimore, Md.
Nustone Products Corp. ..... Union City, N. J.
Nye Tool & Machine Works ..... Chicago, Ill.

Ohio Brass Co. ..... Mansfield, Ohio
Ohio Heater Co., The ..... Columbus, Ohio
Olsen, H. T ..... New York City

Paine Co. ..... Chicago, Ill.
Para Rubber Co. ..... Newark, N. J.
Penn Engineering Co., The ..... Philadelphia, Pa.
Perfection Stove Co. ..... Cleveland, Ohio
Phillips Drill Co. ..... Chicago, Ill.
Phoenix Brass Foundry ..... Irvington, N. J.
Pierce, Butler & Pierce Mfg. Corp ..... New York City
Pittsburg Water Heater Co ..... Pittsburgh, Pa.
Pittsburgh Engineering Co. ..... Jeannette, Pa.
Plomb Tool Co. ..... Los Angeles, Cal.
Plussco Co ..... Concord, N. H.
Polygon Products Co ..... Boston, Mass.
Porcela-Radax Co ..... Pittsburgh, Pa.
Powers Regulator Co ..... Chicago, Ill.
Radiant Steel Products Co. ..... Williamsport, Pa.
Radiator Specialty Co ..... Charlotte, N. C.
Randolph-Clowes Co., The ..... Waterbury, Conn.
Rathbun Products, Inc ..... Detroit, Mich.
Rawlplug Co., Inc., The ..... New York City
Reading Brass Works ..... Reading, Pa.
Reed Mfg. Co. ..... Erie, Pa.
Reeves Specialty Co. ..... Denver, Colo.
Reinhardt Mfg. Co., Edwin G ..... Cincinnati, Ohio
Rhode Island Fittings Co ..... Providence, R. I.
Richmond Engineering Co. ..... Richmond, Va.
Richmond Foundry & Mfg. Co., Inc ..... Richmond, Va.
Ridge Tool Co. ..... Elyria, Ohio
Riverside Boiler Works, Inc ..... Cambridge, Mass.
Riverside Foundry & Galvanizing Co ..... Kalamazoo, Mich.
Robbins, Gamwell & Co ..... Pittsfield, Mass.
Roberts Brass Mfg. Co., The ..... Detroit, Mich.
Robinson Mfg. Co., The ..... Cleveland, Ohio
Rockford Brass Works ..... Rockford, Ill.
Royal Brass Mfg. Co., The ..... Cleveland, Ohio
Rumsey Pump Co., Ltd. ..... Seneca Falls, N. Y.
Russell Appliance Co ..... Springfield, Mass.
Russell Mfg. Co., Inc., John M ..... Naugatuck, Conn.
Russell & Co., W. A. ..... New York City
Rutland Fire Clay Co. ..... Rutland, Vt.

Sands Mfg. Co. ..... Cleveland, Ohio
Sanitary Bath Curtain Mfg. Co., Inc ..... New York City
Sanitary Engineering Co ..... Pittsburgh, Pa.
Sanitas Mfg. Co ..... Boston, Mass.
Sarco Co., Inc. ..... New York City
Scadron Brothers ..... New York City
Scaife & Sons Co., Wm. B ..... Oakmont, Pa.
Scientific Heater Co. ..... Cleveland, Ohio
Scott Valve Mfg. Co. ..... Detroit, Mich.
S. E. T. Valve & Hydrant Co. ..... New York, N. Y.
Sherwood Brass Works ..... Detroit, Mich.
Simonds Saw & Steel Co. ..... Fitchburg, Mass.
Simplex Boiler Stand Co. ..... Brooklyn, N. Y.
Simplex Mfg. Co. ..... Chicago, Ill.
Spencer Regulator Co ..... Salem, Mass.
Standard Elsmere Granite Co ..... Chicago, Ill.
Standard Tank & Seat Co. ..... Camden, N. J.
Standard Water Systems Co. of N. J. ..... Hampton, N. J.
Stark Pump Co ..... Detroit, Mich.
Sterling Faucet Co. ..... Newcomerstown, Ohio
Stringer Brothers Co. ..... Chicago, Ill.
Structural Slate Co ..... Pen Argyl, Pa.
Superbestos Co., The ..... Chicago, Ill.
Swett Iron Works, A. L. ..... Medina, N. Y.

Taylor Co., Halsey W., The ..... Warren, Ohio
Teck Manufacturing Co ..... Chicago, Ill.
Test-Tite Co ..... Philadelphia, Pa.
Thatcher Co. ..... Newark, N. J.
Thermal Appliance Company, Inc. (New Name—
Taco Heaters, Inc.) ..... New York City
Tillery's Little Janitor Clock Co ..... Newark, N. J.
Toledo Pipe Threading Machine Co ..... Toledo, Ohio
Trageser Steam Copper Works, John ..... Maspeth, N. Y.
Trenton Brass & Machine Co. ..... Trenton, N. J.
Trimont Mfg. Co., Inc. ..... Boston, Mass.
Tryco Products, Inc ..... Westfield, Mass.

Universal Smokeless Boiler Co ..... Ravenna, Ohio

Van Arnam Mfg. Co. ..... Fort Wayne, Ind.
Vanderman Mfg. Co ..... Willimantic, Conn.
Vinco Co., Inc. ..... New York City
Vogel Co., Joseph A. ..... Wilmington, Del.
Vulcatex, Inc ..... Chicago, Ill.

Wade Iron Sanitary Mfg. Co ..... Chicago, Ill.
Walworth Company ..... Boston, Mass.
Ware Coupling & Nipple Co ..... Ware, Mass.
Warnock Manufacturing Co ..... Worcester, Mass.
Washington Metal Products Co ..... Washington C. H., Ohio
Watts Regulator Co. ..... Lawrence, Mass.
Weis Mfg. Co., Inc., Henry ..... Elkhart, Ind.
Wesely Co., Chas. ..... Chicago, Ill.
Wessels & Sons, D. D. ..... Detroit, Mich.
Western Metal Specialty Co ..... Milwaukee, Wis.
Western Wire Products Co. ..... St. Louis, Mo.
Wheeling Machine Products Co ..... Wheeling, W. Va.
White Flush Valve Mfg. Co. ..... Denver, Colo.
White Steel Sanitary Furniture Co ..... Grand Rapids, Mich.
Whitlock Coil Pipe Co. ..... Hartford, Conn.
Wilkins Co., Geo. H ..... Chicago, Ill.
Wilks Mfg. Co., S. ..... Chicago, Ill.
Williams & Co., J. H. ..... Buffalo, N. Y.
Woodward-Wanger Co. ..... Philadelphia, Pa.
Worcester Brush & Scraper Co. ..... Worcester, Mass.

"X" Laboratories ..... New York City

Yeomans Brothers Co. ..... Chicago, Ill.
Yost Mfg. Co ..... Meadville, Pa

The building is equipped with two Pacific boilers and a vacuum heating system provided by the Davis Construction Co.

Realtors Know the Advertising Value of PACIFIC STEEL HEATING BOILERS

THE words "Pacific Heating" add much to the appeal of any advertisement. That is why such leading Realtors as Baird & Warner of Chicago play up these boilers when advertising their apartments.

The successful merchandising of large apartments like the one shown here, depends upon the quality materials and equipment used. Pacific Steel Heating Boilers give such talking points.

1120 Lake Shore Drive, built in Chicago's "Gold Coast" by Baird & Warner, Realtors

STEEL HEATING BOILERS · PACIFIC · WAUKEGAN, ILL. BRISTOL, PA.

TRADE MARK REG. U.S. PAT. OFF.

PACIFIC

STEEL HEATING BOILERS

FACTORIES: WAUKEGAN, ILL., BRISTOL, PA.

which brass pipe should you choose?

Brass is not an elemental material. It is a manufactured product and its capacity for maximum service depends entirely upon the skill, knowledge and experience of the maker.

PLUMRITE brass pipe has been tested in actual use over a long period. Thirty years of service have proved that its composition is practical—that its method of manufacture does guarantee uniformity. Re-installation in old, built-over buildings has clearly shown its ruggedness.

Other mixtures, with various copper contents, have been tried and found suitable for certain localities, but they bring no advantages to the vast majority of installations. For unusual requirements Bridgeport can supply brass pipes of any desired mixture. But Plumrite is recommended as the most satisfactory pipe under general conditions.

Plumrite brass pipe, is, we believe, as nearly perfect as a brass pipe can be. Time and again, experience has borne out this belief.

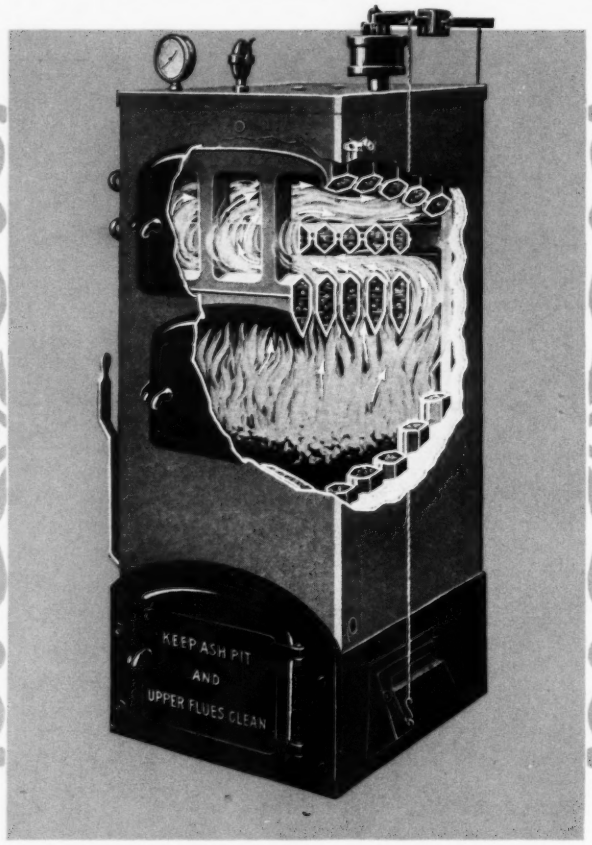
Our booklet, "Bridgeport Standard Mixtures," explains the standard brass pipe mixtures in use to-day—and tells when and where to use them. It will be mailed free to you on request. Send for a copy.

A Typical Service Record

In the Hotel Knickerbocker building at 42nd Street and Broadway, New York, "Plumrite" brass pipe was installed when the structure was built in 1895. In 1921, the building was remodeled for office purposes and the piping, after a quarter of a century's use, was found to be in perfect condition. The complete system was retained, and has continued to give absolute satisfaction.

BRIDGEPORT BRASS COMPANY
BRIDGEPORT CONNECTICUT
Bridgeport Brass Co

"MAKERS OF BRASS PRODUCTS FOR OVER 60 YEARS"



The exceptionally deep fire box permits heavy fuel charges, gives ample space for proper combustion, and makes long firing periods possible. Long fire travel promotes maximum heat transfer, boosts effectiveness. A thick layer of rock wool insulation decreases heat loss.

GOOD LOOKING . . . . BUT AFTER ALL, ITS MAIN JOB IS HEATING!

COLOR helps to sell a boiler in the show room, helps to lift it from the drab and commonplace. Hence the durable, dirt defying empire green finish, with trimmings of glossy black, on the National Jacketed Boiler. It's a fine looking unit—there is none better.

But, after all, a boiler's job is to keep the building warm—not just to add snap to the basement. So the National Boiler *inside the jacket* was exhaustively tested, and the factors of its dependability, economy and convenience conclusively demonstrated before it was marketed.

The National Jacketed Boiler's *appearance* proves its attractiveness; its *record* proves its performance; the fact that it's a *National Product* gives assurance of complete and lasting satisfaction.

NATIONAL RADIATOR CORPORATION

MANUFACTURER OF RADIATORS AND BOILERS

Nine Plants devoted to National Service through these Branch Offices and Warehouses:

Baltimore, Md.—2600-2622 Matthews St. Boston, Mass.—93-97 Oliver St.
Buffalo, N. Y.—259-265 Delaware Ave.
Chicago, Ill.—2445 N. Keeler Ave. Cleveland, Ohio—935 E. 63rd St.
Cincinnati, Ohio—Spring Grove & Elmira Ave.
Indianapolis, Ind.—431 W. Georgia St. Johnstown, Pa.—221 Central Ave.
Milwaukee, Wis.—124-130 Jefferson St. New York, N. Y.—55 W. 42nd St.
Omaha, Neb.—108-112 S. Tenth St.
Philadelphia, Pa.—121 N. Broad St. Pittsburgh, Pa.—1509 Arrott Bldg.
Richmond, Va.—3032 Norfolk St.
St. Louis, Mo.-1042 Central Industrial Ave. Washington, D. C.-2205 Fifth St., N. E.

AERO NATIONAL JACKETED BOILER NATIONAL PRODUCTS

NYE
Pipe Threading
OIL

It is only after years of experiment under conditions actually encountered in our own factory, we are offering Nye Pipe Threading Oil. This oil, specially compounded, is an excellent coolant, a good penetrant, and has the necessary "body" to form an efficient cushion for the die when in operation.

These qualities are very essential if clean, sharp and accurate threads are to be had. Many oils work fairly well on power threading where the die is flooded by a pump, but do not take care of hand threading because they do not cling all the way around the thread. We can positively say this trouble will never be experienced with our oil.

Nye Pipe Threading Oil may be ordered in cans from 1 to 15 gallons and in 30 or 50 - gallon drums.

NYE OIL KIT

16 - Gallon Standard Unit with lockable fill opening and steel gauge stick.

Let us solve your threading problems

Write for Information

A Letter from Harry G. Nye

Sept. 29, 1928.

To the Plumbers and Steamfitters of the U. S. A.

Friends:

Men are strange creatures, as any woman will be glad to tell you. A friend of mine won a silver cup in a bowling match the other day, and now there is just about no living with him. The man is about five feet ten, standing up or lying down, and the cup is four and a half inches from the base to the dome, but he has already had his picture taken with it. No one has the heart to tell him, but the picture looks like he had caught a fly instead of won a cup.

Oh, well, styles change in cups, but men remain about the same. You can laugh at the old boy all dressed up in a white sweater and holding what he thinks is a silver cup but looks like a silver thimble, but cups are nothing new. Our dads had 'em, too, and were all-fired proud of 'em. But they didn't put 'em on the mantel. They were more considerate, and kept them down at the barbershop.

Every man's cup had his own name on it, in gold letters, and the ambitious youth looked forward to the time when he could have his cup there, right alongside the banker's and the bartender's, and as good as any of them. There was quite a lot of artwork on them. The livery stable man, for instance, generally had a horse on his, and the butcher some beef, on the hoof. The man with no desire for work had roses or some other neutral design.

I was saying to an old barber the other day, ''You used to see some queer mugs in the barbershops in the old days." He didn't just understand me and he said, "Yes, but nothing like you see now, since the women got to patronizin' 'em." I thought that was pretty good, and I told my wife, and she told some of her friends, and I guess that is why that barber doesn't seem to be getting the female trade he used to.

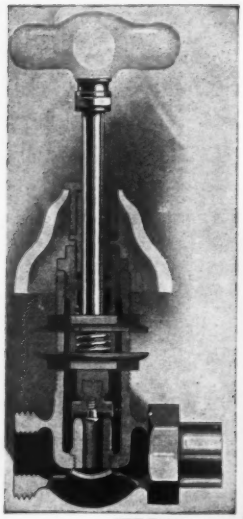
But, thank goodness, Nye Tools are just as popular as ever. No wonder, since they work so much faster and easier and last so much longer. By the way, what do you need in the pipetool line right now?

Faithfully yours,

Harry G. Nye

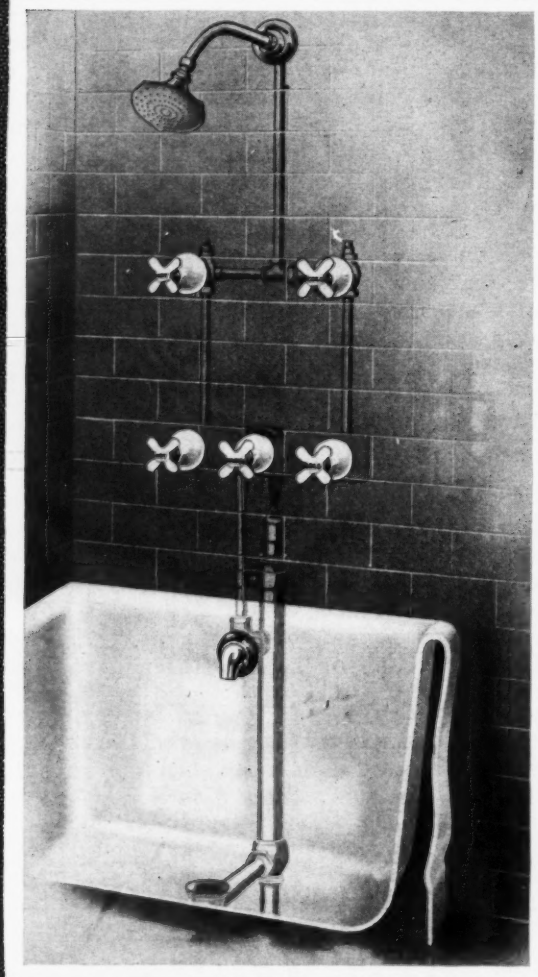
Copyright 1928 by Harry G. Nye
All Rights Reserved.

OTHERWISE KNOWN AS
THE NYE TOOL & MACHINE WORKS
MANUFACTURERS OF HIGH GRADE PIPE TOOLS
4120-30 Fullerton Avenue Chicago, Illinois



St. Regis

Concealed Bath Fixture Complete With Shower



This extra heavy *Red Pressure Metal Valve* with Removable Seat is used on all *Wiseco Concealed Fixtures*. There is nothing better made.

China Shower Head can be furnished if desired.

ASK YOUR JOBBER FOR No. 7198

NEW YORK
PHILADELPHIA
ATLANTA

J. B. WISE, Inc.
WATERTOWN, N. Y.

CHICAGO
LOS ANGELES
SEATTLE

The various departments of "Domestic Engineering" are each handled by an expert in the line of endeavor covered.

Between Ourselves

"The man without organization may obtain results, but only because of those in the organization."— Chas. R. Hutton.

On account of the fact that sanitation has shown such improvement in the past hundred years or so, we are inclined to think sometimes that its inception took place only that short time ago. The truth of the matter is that bathing has been known and practiced for over a thousand years. The Romans were constant bathers, and on the front of this issue is a photograph of one of the old Roman baths, this one being in a state of good preservation at Bath, England.

Your Editor

IN THIS issue A. D. Guion, who has made quite a comprehensive study of the history of plumbing, has an interesting story called, "Plumbing—Meets Eighteen-Hundred-Years' Test." It describes the Roman baths mentioned above. There are few industries which have a history which goes back as far as that of plumbing, and everyone in the industry should be proud of that history. For that reason, aside from the interesting historical facts contained in the article, every master plumber should read and study this material.

WE hear a great deal in these days about the psychology of selling. Salesmen are told to analyze their customers, get their viewpoints on various subjects, and by this psychology, close the sale. The Sales-manager, whose stories have become so popular, has introduced philosophy into selling. At least he has assumed a philosophical attitude in his search for logical outlets for his goods. In this story he tells about another such outlet he has found, in Pittsburgh this time. The master plumbers in question, Rollier Brothers, really came to his attention on the occasion of the opening of their new store. From following up his lead, he found some real merchant plumbers, good outlets for a manufacturer in the plumbing and heating field. The story is called, "Launching the New Store."

WE are prone to think of the home modernizing movement completely as a merchandising proposition, overlooking in our zeal to sell plumbing and heating material, the real essential of any plumbing and heating job, the installation. Naturally, since the industry was built up on mechanical ability, we look to its further improvement through selling methods, but must not, in the meantime, neglect the technical phase. For that reason we are publishing a story this week called, "Which of These Remodeling Jobs Do You Like Best?" It shows the methods of several practical plumbers in making new homes of old by means of modern plumbing.

"I WISH to thank you for sending me the booklets. They have been of extreme value in our evening courses, and we wish to continue this service to our students." So writes A. B. Wrigley, director of the public schools of Elizabeth, N. J., about one of "Domestic Engineering" educational services.

THE master plumber and heating contractor is as cognizant of that which is new and modern in the plumbing and heating industry as the retailers of any other field, as evidenced by the desire on the part of our subscribers to get more complete information on new devices described in our columns. Every new device creates a new interest, and draws numerous inquiries for further information. This spirit on the part of the plumbing and heating retailer puts him out of the class in which he himself, as well as others in the industry, put him at times, that of a hindrance to the promulgation of good feeling for the industry.

IT HAS always been the intention of "Your Weekly" to keep its pages open for discussion, and to welcome criticisms of opinions published. One of our subscribers recently wrote concerning an article which had been published in a previous issue. His letter, drawing and recommendations are published this week along with a discussion of the problem at hand. The article is called "A Condensing Tank Problem," and deals with the use of vents for condensing tank connections.

WITH the new type of architecture which has become so popular in this country, new problems in plumbing and heating installations are met. The type referred to is that in which the upper floors are set back from the original wall line. An interesting example of the set-back construction is the new Penobscot building in Detroit. In next week's paper an interesting article is to be published on the mechanical equipment of this modern skyscraper.

The man who is so busy that he does not have time to read his trade paper is like the man who was so busy chopping wood that he did not have time to sharpen his axe

"TOLEDO" No. 1000M—THE REAL PRODUCTION PIPE MACHINE

Hundreds of contractors in all parts of the country are realizing the tremendous efficiency of the "TOLEDO" No. 1000M pipe machine. This letter typifies the kind of service these owners are receiving from this machine, and how they are profiting by its use.

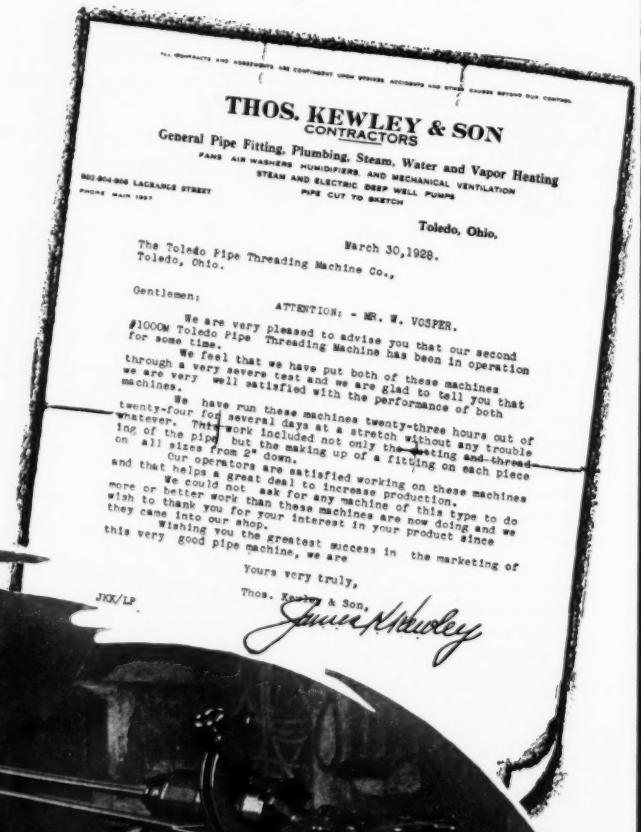
"Twenty-three hours out of twenty-four for several days at a stretch without any trouble whatever." A remarkable recommendation for any pipe machine, but not at all unusual for the "TOLEDO" No. 1000M.

You cannot afford to continue the old method of cutting and threading ½-in. to 2-in. pipe by hand, when a "TOLEDO" No. 1000M will do the work in a fraction of the time.

This machine with complete equipment for cutting, threading and reaming ½-in. to 2-in. pipe will cost you but $325.00 (West of the Rockies $341.25) F.O.B. Toledo, or your jobber's stock. You owe it to yourself to order one of these machines today and realize how remarkably efficient it really is.

THE TOLEDO PIPE THREADING MACHINE CO. TOLEDO, OHIO

New York Office: 72 Lafayette St.



THOS. KEWLEY & SON
CONTRACTORS
General Pipe Fitting, Plumbing, Steam, Water and Vapor Heating
FANS AIR WASHERS HUMIDIFIERS AND MECHANICAL VENTILATION
STEAM AND ELECTRIC DEEP WELL PUMPS
PIPE CUT TO SKETCH

Toledo, Ohio,
March 30,1928.

The Toledo Pipe Threading Machine Co.,
Toledo, Ohio.

Gentlemen:
ATTENTION: - MR. W. VOSPER.

We are very pleased to advise you that our second #1000M Toledo Pipe Threading Machine has been in operation for some time.

We feel that we have put both of these machines through a very severe test and we are glad to tell you that we are very well satisfied with the performance of both machines.

We have run these machines twenty-three hours out of twenty-four for several days at a stretch without any trouble whatever. This work included not only the cutting and threading of the pipe, but the making up of a fitting on each piece on all sizes from 2" down.

Our operators are satisfied working on these machines and that helps a great deal to increase production.

We could not ask for any machine of this type to do more or better work than these machines are now doing and we wish to thank you for your interest in your product since they came into our shop.

Wishing you the greatest success in the marketing of this very good pipe machine, we are

Yours very truly,
Thos. Kewley & Son,
James K. Kewley

JKK/LP.

DOMESTIC ENGINEERING

Vol. 124, No. 13
Whole No. 1868

The Plumbing and Heating Weekly

Chicago, Illinois
September 29, 1928

OBSERVATIONS

Remodeling Makes It Up

The volume of new construction has been falling off in the last few weeks. Figures on building contracts awarded for August were under those of July and under those of August of last year, also. The decrease is not great, and the year of 1928 will go down in history as another banner building year. However, any decrease is felt by the master plumber and heating contractor who is not organized to keep busy even when new work is slow.

This paper has placed before its readers on many occasions the possibilities for business in remodeling. With new work falling off, such possibilities should be increasingly attractive. It is sound management, therefore, to develop the opportunities which exist.

Any master plumber and heating contractor familiar with the community in which he operates can think of home after home which is well built and good for years to come but which needs modernizing. Every master plumber and heating contractor has a line of plumbing and heating equipment which should sell itself—it is so beautiful, so labor saving, so desirable in every way. It is merely necessary to get those homes and that equipment together, and that is done by proper advertising and personal effort.

The Opportunity

The first issue of this paper carried a prophecy that new building would be active but that development of the remodeling market would be necessary to make the year a good one. The way things are going and the way they look, this is as true today as it was at the start of the year. We call the facts of declining new work and of remodeling opportunities to our readers' attention again, therefore, in order that they might do everything possible to make 1928 a good year for them.

For Rent

In line with the above discussion on remodeling possibilities in plumbing and heating, we note in a government bulletin that rents are coming down in most sections of the country. If this is a case of supply and demand, it means that there are more homes and more apartments for rent than there are tenants. Therefore, landlords are forced to lower their rents in order to attract tenants to their buildings, and this has resulted in a lower general average everywhere.

On the other hand, we know of new, modern apartments that are renting for as high a price as was ever received. This means that such apartments are not so subject to the law of supply and demand. They are in demand at their own price, even though there are many vacancies when we consider apartments in general. It is because people will pay for modern homes, equipped with up to date plumbing and heating facilities.

In Demand

The landlords of out of date apartments will never get rich waiting for the demand to catch up to them. They must compete with the modern apartments now. They are, therefore, ripe prospects for the master plumber and heating contractor who can prove that he holds the key to rented apartments at good prices.

We recently ran a story about a master plumber who toured around his city and when he saw a "For Rent" sign in an apartment building he would look up the owner and sell him the idea of modernizing his building. He proved to the owner that the possibilities for increased rent would amount to more than the cost of the plumbing and heating. He pointed out to the owner how much he was losing by letting his apartments lie idle. And he sold considerable plumbing and heating, which is what we all want to do.

A GOOD BUSINESS

This game of business is so conducted that there is always a chance for success for the man who knows his line, keeps abreast of progress and works. There is considerable conversation among master plumbers and heating contractors about the ruinous prices at which work is being let, and the competitive scramble that exists is undoubtedly a serious menace to prosperity. However, the business man who runs his business on sound principles, in spite of temporary conditions, is going to come out ahead. The master plumber and heating contractor is in a good business. It supplies an essential service to the public. It is worth a fair price. Properly conducted that business will win its share of success for its owner. Along that line, it has been said that business does not fail, it is the man who runs it that fails. The master plumber and heating contractor, therefore, has himself to look to for the success that is inherent in the plumbing and heating business.

Launching t

Rollier Brothers' new building. If you had attended the opening you'd have seen the decorations below

The Sales Manager unburdens himself of another story of successful management and grows optimistic

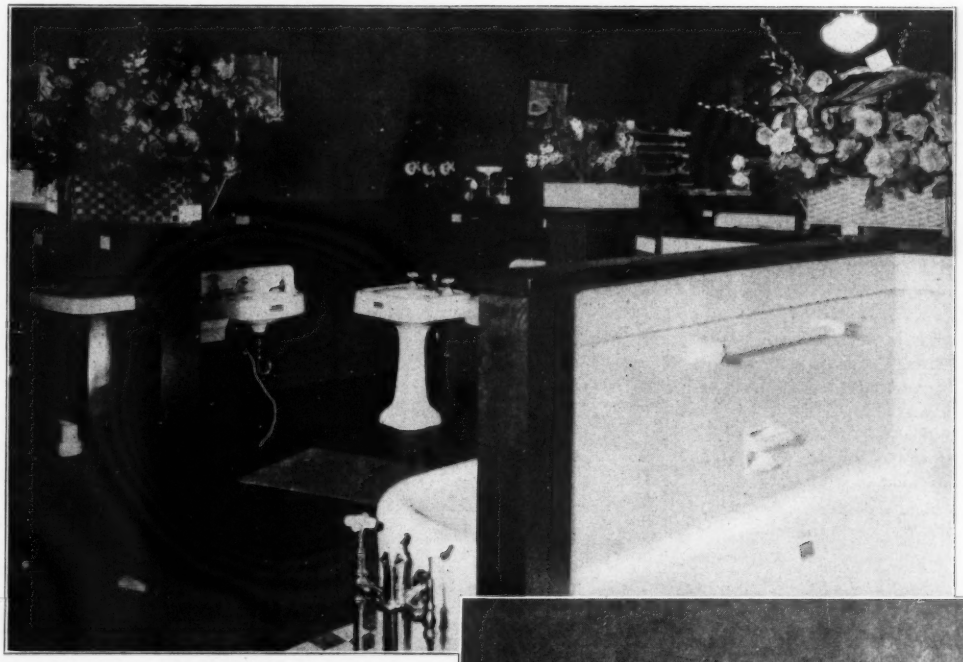
WHEN the United States Department of Commerce published one of its many reports on retail merchandising, it had this to say about the fact that it had been necessary to assume, for purposes of the survey, that all distributors were "showing the same aggressiveness in sales effort," among other things. Then: "Since these assumptions involve the human equation, it may be taken for granted that there are bound to be variations in the selling effort. . . . Nevertheless no general study of this nature can be made without making such assumptions."

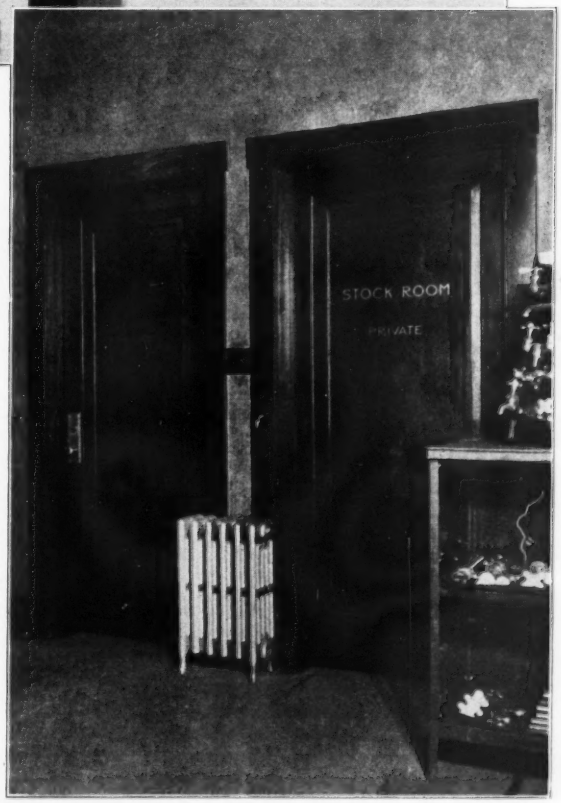
And that, if you ask me, is the problem of every sales manager who has the job of deciding through which particular group of retailers the products of his company ought to go. "The human equation." He has to decide which of a number of groups is putting forth the most aggressive selling effort. That is, as a group. Not, mind you, as individuals. The man who bases his judgments on the few individual instances which may have come under his eye, is apt to find himself no longer a sales manager. Because the human equation includes not only the retailers, but himself and all the rest of mankind.

If, for instance, a man believed every funny story he hears about doctors, his judgment on doctors wouldn't be worth a plugged nickel. And if he listened to all the stories his friends have to tell him about how this doctor or that did this or that, and believed them all, he'd find himself refusing to have a doctor remove his appendix and (this isn't so ridiculous—it's done in business) he'd be trying to get a dentist to take out the bothersome member. You've probably experienced this: One friend will tell you what a mess a certain doctor is—another will tell you that his mother-in-law, or his wife, or his child, would today be an invalid for life but for the work of the same doctor.

So, if a sales manager has the job of finding an outlet, let us say, for a new line of products, he can't trust to the popular ideas concerning the trade through which he thinks those products ought to go. He can't even trust his own personal experience. He may have had a sad experience at the hands of one member of that trade or profession—but that doesn't make him a competent judge of the whole trade or profession, not if he has a part of the gray matter left with which he was born. He can't listen to his friends, nor depend on the funny columns of the newspaper. He can do only one thing—investigate. And when he has the data before him, make his judgment

g *the* New Store





As you come in and look to the right you see the scene above. At the rear you see the office and stock room doors

impersonally. He's got to get back of the scenes.

I've told you some stories of what I found in an investigation of retailers of the plumbing and heating industry. I have more to tell—and the one hereto appended is of Rollier Brothers, whose new store at 5501 Walnut street, in the city of Pittsburgh, was opened quite a while back with a resounding bang.

LAUNCHING A NEW STORE

YOU know, there comes a time in the life of every individual, or association of individuals, when he or they may be considered to have "turned the corner." Maybe you or I have made our first hundred thousand, or acquired our first home—or reached the point of achievement where we may feel that we have gained a long-desired objective. And we'll celebrate it. We'll have a house-warming of one kind or another—give a theater party, buy a new car, and in general hang out the signs for the world to see that we've arrived. Something like that is usually true of the setting up of a new place of business. It represents a solution of the vexing problems a firm has had in working under inadequate conditions, and the new establishment embodies all of the features which the firm did not enjoy during the period of growth.

If the members of the firm have a sound grasp of selling principles they will recognize in the opening of the new place of business a merchandising opportunity of great value.

When Rollier Brothers opened their new building, the event was announced in a two-page newspaper ad, in which the public was invited to visit the store. In the average run of advertising, it is difficult for a company to make known in detail its complete equipment for service, because of the cost. But on an occasion of this kind, there is a splendid opportunity to review the company's progress and to describe the facilities which have been prepared for the future service to be offered.

In the two-page ad announcing the opening of the new

building there was a picture of the building and a description of its layout. Below this came copy on "Rollier Bros. Success Built Upon Service," telling of the growth of the company. Then came the invitation for the opening, which was to occupy two afternoons and evenings. The remainder of the page was made up of advertisements of fixtures offered, or of those who had contributed their services in erecting the new building.

A SUCCESSFUL OPENING

THE opening itself was in the nature of a miniature exposition of plumbing and heating material. Salesmen representing the various lines on display were present to explain their particular product, thus allowing the three brothers and the rest of their organization to mingle with the crowd and get acquainted. The shop was very nicely decorated with a baby grand piano in the corner, which was the means of supplying music for those who cared to dance. The people were escorted through the show room, through the offices, through the work shop, into the basement.

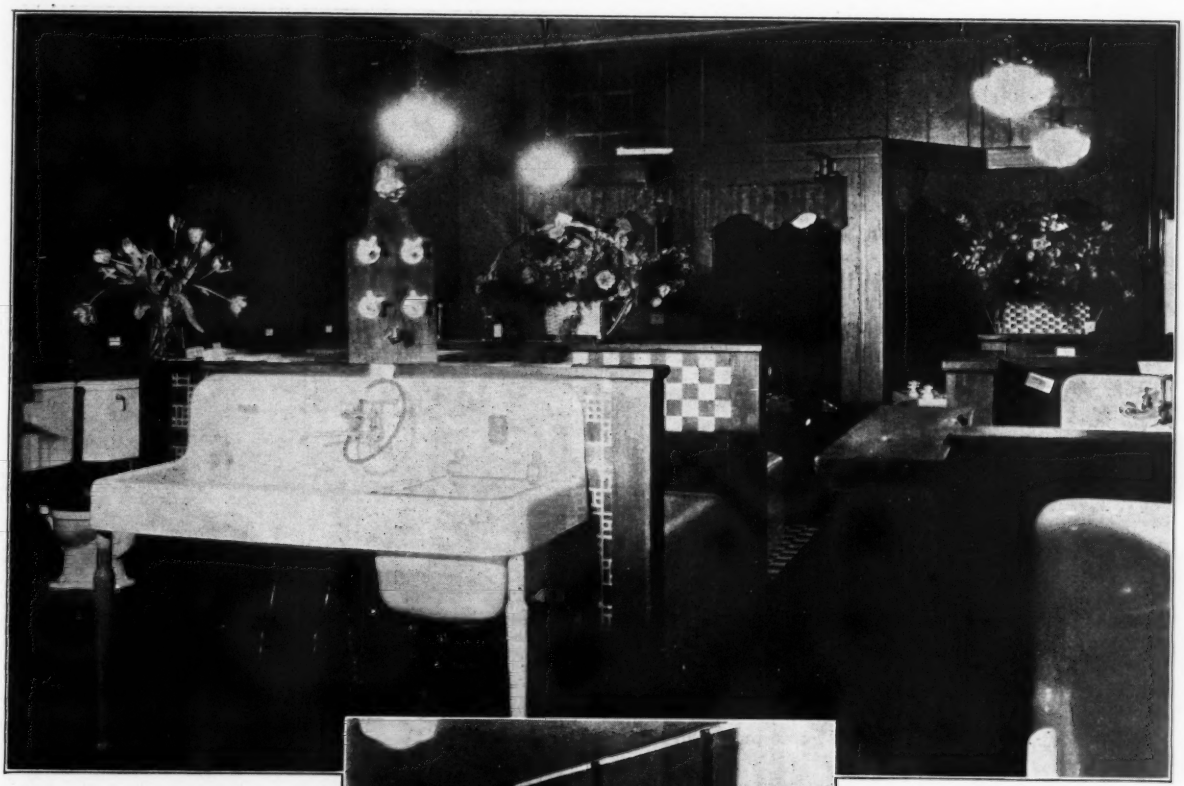
Every piece of equipment that was of a time-saving nature was labeled, such as, the power pipe threading machines had a card on them marked "The Labor Saving Pipe Cutting Tools." An elevator from the basement to the second floor was labeled "Time Saving Elevator." Their entire shop is equipped with steel bins; their counters are of steel. They have a stock room man all the time.

Over 3,000 people visited the opening of their new plant, each of whom received a souvenir pencil. The names that were secured at this opening were put on their prospect list and in a great many cases followed up personally and resulted in considerable business.

Unquestionably such an event places a company in its community. I think that the idea of labeling the time-saving equipment is one of the most original I have ever run across. I can think of no better reply to the accusation of over-charging — and certainly, in the minds of those who visited the store and shop during the opening, that time-saving equipment will stand as the guarantee of efficient and time-saving methods in the industry.

I said that such occasions represent the turning of a corner. I mean by that, they represent the end of one period in which an individual or a company has been getting over its growing-pains and settling definitely the characteristics which mark its service among all other firms or individuals. Naturally, back of this opening, there is a story of effort. Rollier Brothers have a splendidly

Above—Looking down the right-hand wall. The show case below is in the right rear corner



Above—Looking toward the door from the rear of stockroom. Left —part of the office

organized working plan. Here are its main points:

Rollier Brothers use no newspaper advertising. They maintain a mailing list of about 5,000 names which is a list of selected home owners and which they get from a new telephone book put out in this city that gives the address, name of party and telephone number, arranged in sections. This list from the telephone directory is taken to the City Building and the names of the home owners taken out and put on the mailing list. They use direct-by-mail matter some of which they get up themselves and a great deal of which is furnished by manufacturers. They also get up letters of their own but did not have at this time any they could give me.

They feel that in their case the reason for their business growing as it has, has been due to fair treatment, honesty, service and good work. They find that merchandising service and the right kind of financial policies have been very essential. They feel as though they have met their competition by proper buying and salesmanship. They also feel that the opportunities in this field are unlimited and that a man can get out of it what he goes after.

This firm is made up of three brothers one of which, E. A. Rollier, acts as salesman following up prospects which they get through the result of their direct-by-mail advertising and through the report cards of their journeymen. The main point of their sales talk is their honesty in business, square deal and service.

SALES POLICIES

THEY maintain an excellent display window and feel that it is profitable inasmuch as they use it for featuring specials which they advertise and these windows are changed once a month. They maintain a very elaborate sales room which you will notice from the photographs enclosed and they feel it earns them considerable business. They price their fixtures and think it a good practice for the reason that a person looking at them knows that there is a definite price on the article and that everyone looking at that article is given the same price. They feel that it insures confidence in their trade. They hold special sales every month and handle practically all the accessories, such as toilet seats, scales, gas ranges, etc. They feel that every plumbing and heating contractor should handle accessories as they lead to further sales and larger jobs. They have used in the past Bath a Day stickers and signs. They go after new customers through direct-by-mail and solicitation from their prospect list. They make use of inspection cards through their journeymen. They believe that they are able to hold their customers permanently by giving the best of service and

always taking care of them quickly and in the right way.

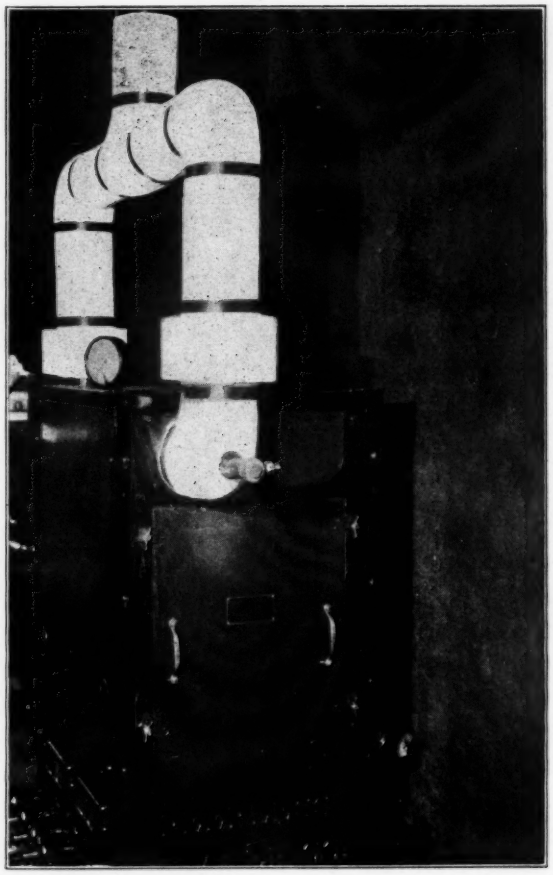
They maintain three delivery cars; do not have any shop on wheels; they maintain an emergency service whereby they will go out at night but do not feature this.

MANAGEMENT POLICIES

THEY discount all bills and feel that this helps them get a bigger profit by turning over their money quickly. They collect promptly through a system of complete follow-up; they do not, however, believe in stereotype collection letters as they find that every case is different. A special letter is written in each case. They allow a cash discount to their customers for prompt payment and find that it helps keep collections coming in. They offer from 2 to 5 per cent discount depending on the nature of the account, as to size, etc. H. W. Rollier explained to me that in one case the woman was inclined to be a little fussy about paying her bill and they allowed her 5 per cent cash discount; she paid the bill, thus closing the matter, satisfying her and bringing the money in to the till.

They always look up a new customer's credit rating and always include overhead and profit in estimates. They calculate their overhead and profit through a very complete regular cost system that gives them a correct overhead each month and they average their overhead for a period of six months. According to their system they keep three large books in which every item that they handle is listed and also the price they pay. This price includes cost per item and selling price per item. In this way anyone in the office is able to quote prices on any of the items they have to sell.

In estimating jobs, E. A. Rollier uses estimate sheets and makes rough layouts of every job they do. They are able through their very complete bookkeeping system to give a detailed statement daily if necessary to banks or anyone who might desire it. They have a stock record form which enables any one to find any item in stock. Every item has a number corresponding to the number of its bin in the stock room.



Above—Gas boiler installation at right of sales room. Below—a dishwashing sink display

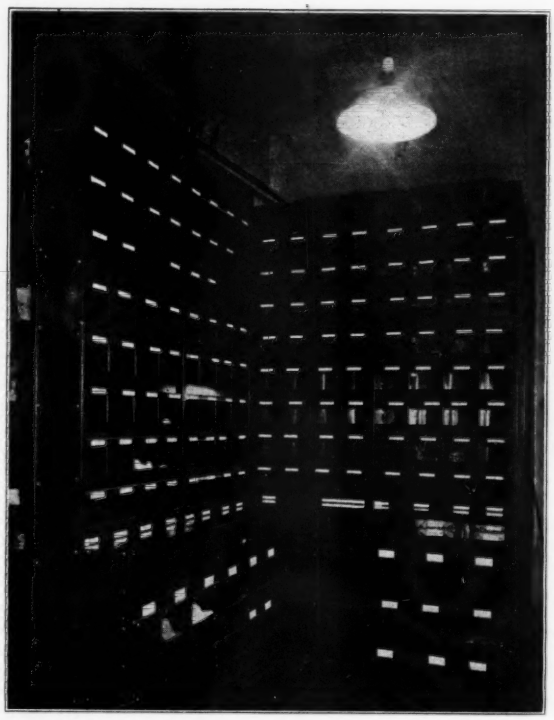
They have two apprentices in their shop and encourage their men to advance ideas for betterment of work. Their men are requested to come direct to the heads of the firm and give them their suggestions in person.

Rollier Brothers business was started with a borrowed capital of $1,400. They now have their own store building that cost $90,000. Their average volume of business is about $125,000; rate of growth in annual volume has increased in a peculiar way. The first year E. A. Rollier was in business alone; the second year H. W. Rollier came with him and the business quadrupled.

This probably represents the result of a division of responsibilities, allowing each to specialize in the phase for which he is best fitted. The third brother joined the firm when they opened their new establishment. He had been with them, however, learning his trade before that time.

EDUCATIONAL PUBLICITY

YOU know the often quoted saying of President Roosevelt that every man owes some of his time to the industry of which he is a part. How we are to give that time depends upon the circumstances. There is always association work for the good of all to be done, of course. But in the every-day effort of the retail outlet to keep its products before the people it serves there is an opportunity to do something



The stock room is completely equipped with steel bins

for the industry at large.

I mentioned above the labeling of the time-saving equipment in the Rollier establishment during the days of the opening of the new store. Three thousand people passed through the store and shop. Three thousand people saw those placards. Now, we are all of us familiar with the gigantic strides in the way of efficiency made in American industry. But we don't always associate that progress with the retailer. And in some cases we have quite the other idea.

There are three thousand people in the city of Pittsburgh who have, in a very definite way, had the idea of efficiency associated with the plumbing industry—with the plumber. To that extent the industry is the gainer. I don't need to remind you of the attitude the whole country was taking a few years back against corporations. Just because a firm was an incorporation, it was under suspicion of a lot of things. Today small investors hold millions of dollars worth of securities of corporations. It didn't happen overnight, and it didn't happen by itself. Education helped.

Another feature of the Rollier system of management which deserves a little more attention is its stock-keeping. I mentioned above the fact that anyone could find any item required. The "Purchase Record" consists of a ledger sheet ruled on both sides. Each side has sixteen columns—two sets of eight each—which are as follows: Date, From, Quantity, List, Discount, Net, and Selling Price. At the bottom is a small space divided into five compartments reading: Unit, Size, Article, Location or Bin No. and a divided space showing maximum and minimum stock to be carried. Thus, if a white toilet seat is required, if a fitting is required—if anything at all is wanted, reference to this stock record will show its exact location. The time wasted in some shops looking for material, and getting it rushed from the wholesaler when it is found, suddenly, that the item is entirely out, would pay for the installation of such a system, which is after all quite simple.

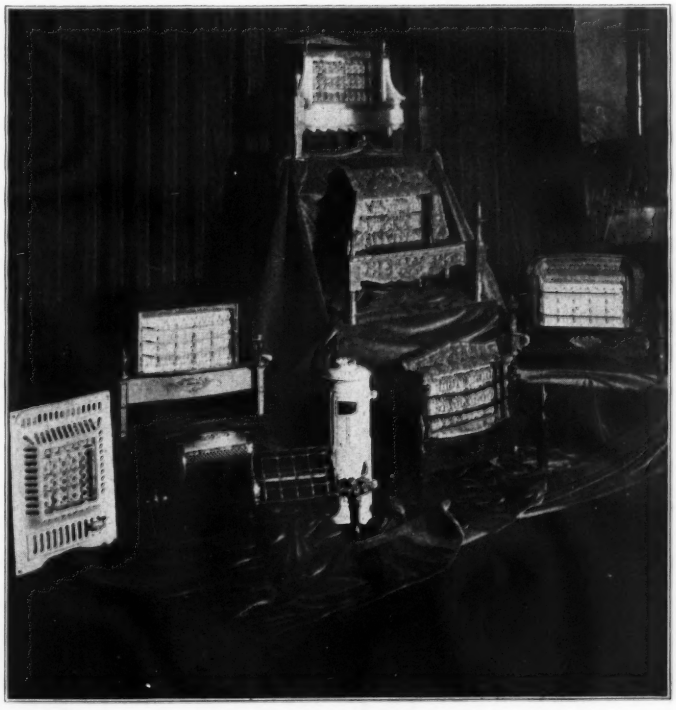
The record is kept daily so there is no likelihood that a truck going out to a job will have to go around by way of the wholesaler to pick up an assortment of items while men are waiting on the job.

Because this thoroughness of record-keeping is one of the policies of the company, its financial arrangements are always sound. I have never been able to convince myself that the man who had a really proper set of bookkeeping records could enter into the kind of competition which has marked the whole building industry. Will a man walk in front of an on-coming automobile which he can see? Will a man walk in front of sure failure if he can see it coming? I don't believe he will. If he isn't sure of just where he stands—if overhead and profit are matters which are never accurately presented to him from a set of adequate records, he may kid himself along.

But if he can furnish a statement at any moment of the precise financial condition of his business, it just doesn't seem natural that he would deliberately disregard it. After all, preservation is the first law of business as well as of nature.

It has seemed to me that the idea of merchandising is striking deep in our industry. What I mean is this: In the electrical industry there has been a vigorous merchandising movement. But the industry is realizing that it has over-stepped and made something of a nuisance of itself with the householder. The thing is being done more conservatively in the plumbing industry and for that reason it seems to me to be going deeper. We are definitely in the "merchandising era" and have put behind us our first weak efforts in that direction.

Room heater display, effectively arranged



A Condensing Tank Problem

WE HAVE received an interesting communication from a member of the Schoolmaster's Class, concerning the problem of by-pass on a condensing tank connection. A by-pass is almost always a subject of interest, and this one particularly so, and therefore, instead of merely answering the inquiry direct, we are going to make a short article of it. The letter in question is as follows:

I have been reading all of your plumbing problems and have answered quite a few myself. I think there isn't anything that helps the plumbing trade as this does.

I am writing you in regard to a drawing in "Domestic Engineering," July 28, 1928, Fig. 3, page 27, from Joseph Quirk, South Boston, Mass., concerning the condensing tank connections. You said to leave out the pipe from A to B, as this was a by-pass for sewer gas if the tank was drained in summer. That is true enough. This pipe acts as a non-syphon to the tank, and vent from the sewer. You suggested if there was danger of syphoning, to drill a small hole in the bend. This would work all right, but your loop-hole is still there.

If the tank should be drained, the sewer gas would pass into the tank through the drain, as when the tank is drained there is no trap whatever between the tank and sewer. Am

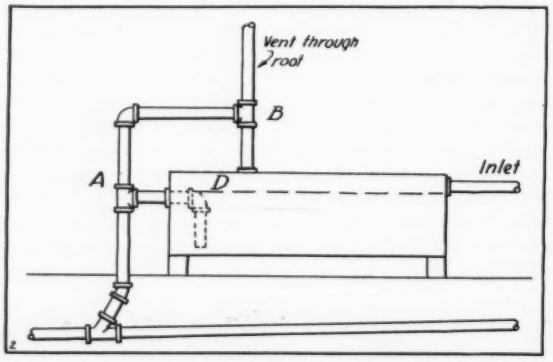


Fig. 2

I right or not? I think a condensing tank should be trapped in the natural way, and the trap vented.

I am enclosing a drawing explaining my idea. I believe this is a pretty good layout for a condensing tank. I may be wrong, but I don't see any loop-hole for sewer gas to get through at the air valves. Do you?

Pipe A to B could come out and a hole be drilled at D, and be just as good. Pipe line C is just to drain the condensing tank, when it is necessary to do such without letting water out all over the basement floor. Pipe line C has a gate valve. Vent line E can hook to any vent in the plumbing system (except refrigerator or any indirect system). Vent line F should go

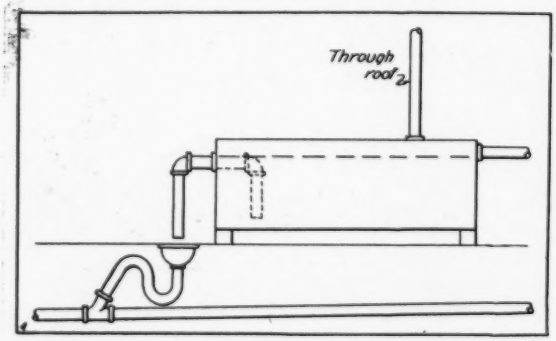


Fig. 4

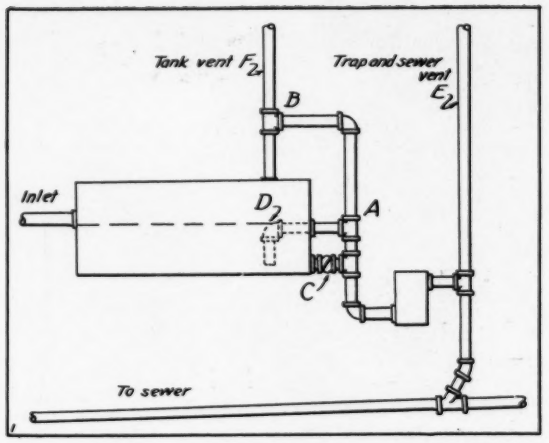


Fig. 1

directly through the roof alone. In July 28 issue, Figs. 3, 6, 7 and 8 are subject to sewer gas as soon as the condensing tank is drained. This is also true about Fig. 5, owing to the way the drain enters the drum traps.

Our correspondent is correct about the vent hole in the outlet pipe of the condensing tank. The hole would make a by-pass in the same manner as the pipe connection which we have advised omitting. His letter and drawing present something that is of considerable interest, and concerning which much could be written.

Correspondent's drawing is shown in Fig. 1.

In his letter he states that he doesn't see any way in which sewer gas can get through air valves. What he means is this—that in Fig. 2, which is the connection he is criticizing, if in the summer time the water in the steam boiler were drawn off, it might be possible to establish a by-pass between the sewer and the house, through the inlet connection, to the piping, and thence through open air valves.

The suggestion was made that the pipe from A to B be omitted, this being used only to prevent siphonage of the tank, and the tank protected against this danger by

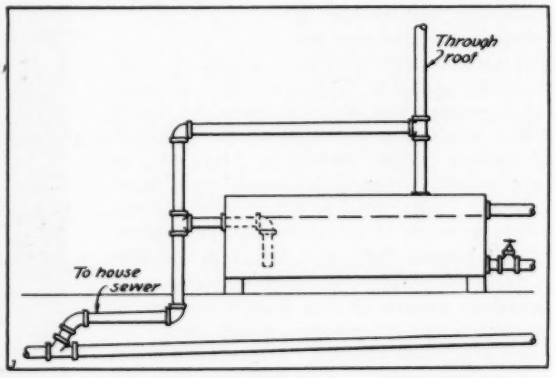


Fig. 3

drilling a small vent hole at D. Our correspondent points out that this hole would form a by-pass, and he is right. The point he makes in his last paragraph is that his method, as shown in Fig. 1, would allow the pipe A-B to be omitted and the vent hole used at D, the danger of by-passing being overcome by the use of the drum trap.

Our answer to this is that the dipping down of the outlet pipe forms a trap, and the tank then becomes practically double-trapped. It may be pointed out that the

vent hole actually would act to relieve the air between these two traps, but this should, of course, be a very small hole, and may easily become filled with sediment or rust.

The drum trap protects the tank from direct communication with the sewer when the tank is drawn off, and as

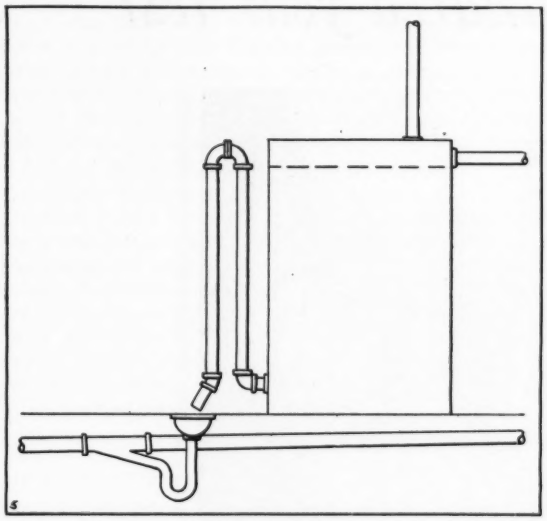


Fig. 5

far as that feature is concerned it is of advantage. In this connection we might say that there is hardly an instance that we know of, where any provision is made in a city plumbing code, or in a pilot drawing, for the drainage of the condensing tank, and it is of course an important matter. In looking into this matter we have referred to a considerable number of codes and drawings, and Amsterdam, N. Y., stands quite alone among them, in giving any attention to this detail. Their drawing of the condensing tank shows a draw-off for this tank, but, as seen in Fig. 3, it simply provides apparently for draining the contents of the tank onto the cellar floor, and with this draw-off connection open there would, of course, be direct communication between house and sewer.

This question of direct communication which may result in one way or another through use of a condensing tank, is a matter which we do not remember ever having seen

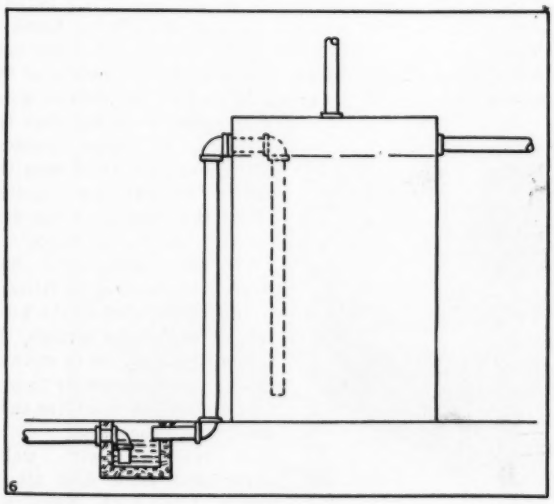


Fig. 6

discussed before, but apparently it is a real problem and worthy of serious attention.

Such study as we have given the subject makes us feel that we would favor an indirect connection for the condensing tank. We would like to see a discussion of this

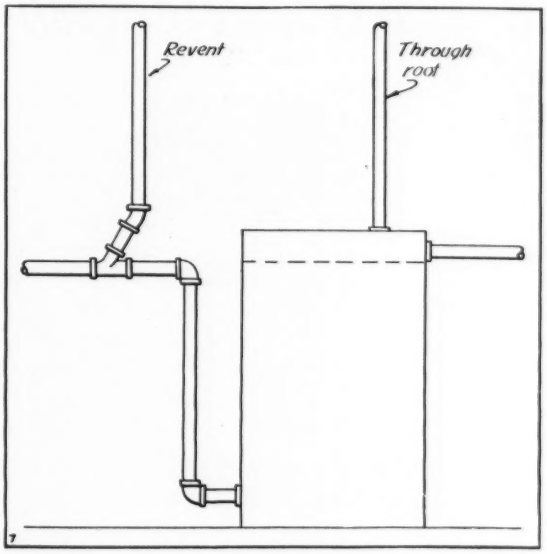


Fig. 7

opinion. There may be strong arguments against it. We show such a connection in Fig. 4. Our information shows that this type of connection is used in Atlanta, Ga., Des Moines, Ia., Pittsfield, Mass., Glen Ellyn, Ill. Asbury Park, N. J., shows on its pilot drawing an indirect connection such as shown by Fig. 5, and the Glendale, Calif., method is seen in Fig. 6. None of these show any drainage connection, but it would be perfectly safe to empty the tank shown in Fig. 4 into the floor drain through a draw-off connection having a valve to control it. This would be true also of Fig. 5.

The state code of Ohio and the Ohio pilot drawing show the condensing tank connections as given in Fig. 7, and the same sources of information for Indiana indicate the method of connecting given in Fig. 8.

In studying the subject somewhat, we ran onto quite a variety of practices, some of which are to be seen in Figs. 9, 10, 11 and 12.

Fig. 9 shows how they do it in Birmingham, Ala. This is another case of double trapping. If, instead of connect-

(Continued on Page 59)

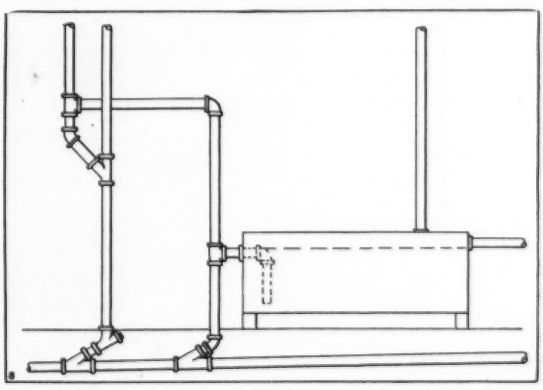
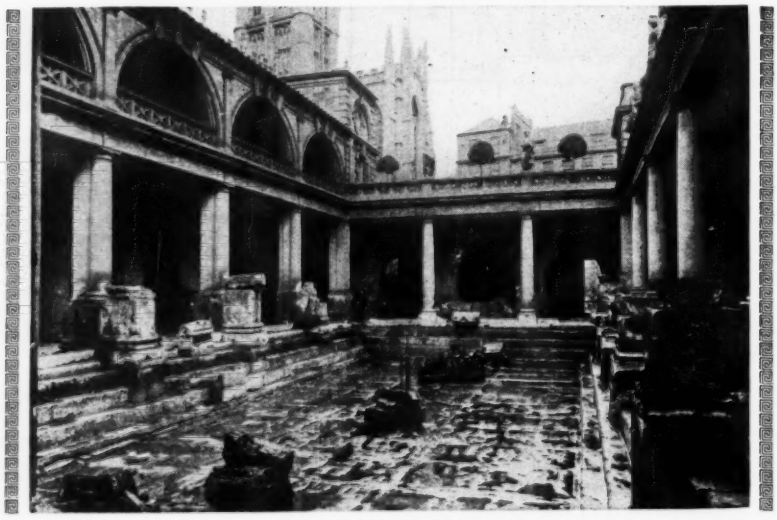


Fig. 8

Plumbing—
Meets eighteen-hundred-year test



The Great Roman Bath. It is nearly always seen full of water. This photograph was taken to show the sheets of lead with which the bath is floored

Bath, England, has examples of plumbing work in remains of old Roman baths

By A. D. Guion

IF SOMEONE were to stage a world contest for the city most ideally named from a plumbing standpoint, it is probable the judges would award the first prize to Bath, England.

Moreover, it is correctly named, for the simple word expresses exactly the essential quality of the place.

Bath is, first and last, a bath. The three natural hot springs to which the city owes its name have been known for some 1,800 years. Even in Roman times, it was famous for its health giving properties. Here are the only hot mineral springs in Great Britain.

While still famous as a watering place, the chief interest for the historian lies in its connection with the distant past—to the three and one-half centuries marking the Roman occupation of Britain.

In those days, it was known as "Aquae Solis" and then, as now, was famed for the medicinal value of its waters. The site of the ancient city was bounded by walls less than three quarters of a mile in circumference, within which were three groups of buildings: (1) The baths themselves; (2) private houses occupied by the officials, residents and visitors, and (3) a temple to the God Sol or Solis, patron of the springs.

The discovery of these ruins came about through the decision in 1755 to dismantle a mediaeval abbey in order to erect a suite of baths for the Duke of Kingston. In removing the foundation, a number of stone coffins were found, still further below which hot mineral water gushed out, and interrupted the work. The site being drained, Roman masonry was disclosed and subsequently a number of baths and other apartments, which apparently bathers used preparatory to entering the hot chambers. Some of these were beautifully paved. During the following century a series of excavations revealed the full extent of the Roman activities in the neighborhood of the present town.

Top: Roman lead pipes.—Bottom: Portion of rectangular lead duct, used to convey hot mineral water to baths

It seems probable that the builders of these ancient baths were attracted into the valley by the hot springs about the middle of the first century, A. D., probably not very long after the first Roman occupation of Britain.

Once persuaded of the healing virtues of the springs, the Roman builders set to work in their thorough manner to protect as well as to utilize their medicinal properties.

A reservoir with walls, three feet thick and six to seven feet high kept the waters free from pollution and

still serves this purpose. A culvert led from this to a trough in which were found metal flagons, a drinking cup and some personal ornaments. A wooden duct some 450 feet long was also discovered.

The remains of the baths are still readily recognizable, although time and the rough hand of man has wrought havoc with what must at one time have been magnificent structures. Portions of the roof, arches, and columns have fallen and lie in fragments. Builders, seeking for stone, have plundered freely, and in some instances, portions of the old have been built upon by more recent structures. The principal buildings so far unearthed, cover an area of 300 feet in length by 150 in width.

The great bathing basins and the hypocausts which furnished the means for heating the water are still discernible. There are five or six large basins of hot water, deep and long enough for swimming purposes. Two only are plainly visible, these being an oblong basin 40x80 feet in extent and a circular bath 32 feet in diameter. Other compartments provided for vapor baths, a cold plunge and a dipping well for drinking purposes. It seems likely that there were separate compartments for men and women, as water heating apparatus is found at both ends of the building.

The floors of the baths are still covered with sheets of lead 40 lb. to the foot. The recesses in which the bathers lounged and the diving stone from which they plunged into the warm waters can still be seen.

The temple nearby was fairly large in size and was ornamented by richly carved stone sculpture work in a vigorous, though barbaric, style.

Outside the walls, there is an ancient graveyard, the inscriptions in which indicate that some of the visitors who came to Aquae in search of health did so in vain.

There are also indications of the existence of a guild or club and a few altars bear evidence of gratitude on the part of those who recovered or who hoped to recover and expressed hope or gratitude in offerings.

The city evidently attracted no great city population—never possessed military importance. It drew to it no crowds of statesmen or wits such as flocked to it in its heyday a hundred or a hundred and fifty years ago, but it enjoyed, no doubt, a comfortable existence in its sheltered valley with its stately edifices and healing springs.

It is also reasonable to believe that wealthy Romans occasionally sought health in this distant resort. The

The "douche stone" at the side of the Great Roman Bath

Romans of that day were "high livers" and it is likely that a great many of them suffered from gout and other ailments which result from improper living. Reports of the curative waters in this Roman province must have come to Rome and the epicures of that city, after a season of riotous living, undoubtedly repaired to the watering place in Aquae Solis, much as do wealthy people today for curative purposes rather than for purposes of pleasure, as was the case later.

Details of the plumbing practices of ancient peoples are always interesting. We find from an examination of the cross section of lead pipe illustrated that the

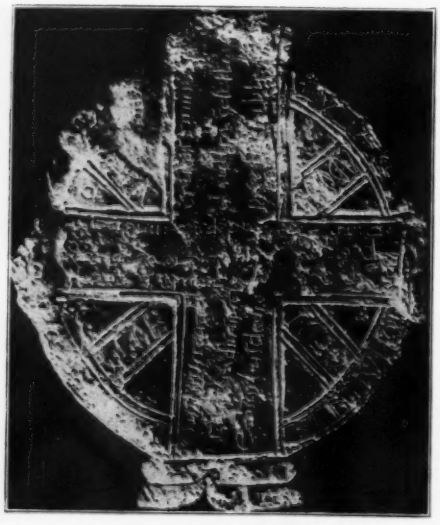
Roman drinking vessels

procedure followed by the plumbing contractor, who did the job at Bath, differed from that at Rome itself.

For instance, during the reign of the great Emperor Vespasian, 69 to 79 A. D., the "Bath" pipes (see illustration) are triangular or rectangular in shape—those in Rome during the same period were round or oval. The method of forming the joint at the seam is also different—the Bath plumbers not only made a neater looking job of joining the edges, but also one taking more skill.

Roman lead pipe—supply to "douche stone"

At both cities, however, the practice of marking the pipe with identifying words or intials was followed. No evidence of the exact procedure followed in Bath for the marking of pipe is available, but in Rome the desired inscriptions were first cut in relief on stamps of wood or marble. These were then impressed on the sand mold or bed in which the sheets or lead were cast and which later were to be formed into pipes. The letters, of course, then appeared in relief, as shown in the illustration.



Saxon cross of lead

Probably much of the lead used by Rome for its plumbing work came from the British Isles. It is also interesting to know that in July 1907, while excavating for a new hotel in Rome, a piece of ancient lead pipe was unearthed, which, upon analysis, proved to be practically as pure as lead used for the same purpose today. This indicated that either the lead was mined in a very pure state or the smelting and refining methods used by the Romans were as capable of producing results as those employed today.

For comparative purposes, an analysis of lead from Southeast Missouri was made, showing impurities of .08¼% and 99.91¾% lead, while the Roman pipe analyzed .04¾% impurities and 99.95¼% lead. Roman pipes were made of much thicker lead than is the custom today. A section of 5-inch pipe indicated that lead ran more than 20 lb. to the square foot. Pipes were joined endwise—one end being enlarged by hammering—the end of the adjoining section reduced in size so as to slip into the larger one, hot lead then being used to seal the joint.

That the "plumbarius" or lead worker was called upon to do more than what we modernly term "plumbing" is seen from the remains of a Saxon cross of lead found in the ruins of Bath.

STREET AIR NOT YET POISONOUS

Street air is not poisonous, and it is not likely to be for years, says Dr. W. A. Evans, writing in the "Chicago Tribune," and continues: This is the opinion of Bloomfield and Isbell. It will be remembered that the date set for New York street air to become unusable is approaching. The reference is to poison by carbon monoxide from automobiles.

Messrs. Bloomfield and Isbell are connected with the U. S. Public Health service. The investigation covered 14 of America's largest and worst congested cities. They assured us that two parts per 10,000 was the allowable limit for carbon monoxide in air which human beings were to breathe for any considerable time.

The air was taken from narrow streets where the roadway was densely congested with automobiles. The analysis showed carbon monoxide ranging in proportions from two-tenths of a part to one and seven-tenths parts. In two places only was the poisoning above the limit. One was a long, vehicular tunnel which opened at a cross street with a traffic stop signal. On one occasion, when this signal stopped traffic for thirty seconds, the limit of poisoning was passed.

In a few instances air was taken from rooms two to five stories above the street level. Air in those locations was found to be about the same as that taken from the street.

The general conclusion is that traffic cops on busy street intersections suffer somewhat from carbon monoxide. They should work in short shifts. Traffic cops should have their assignments shifted at rather short intervals. A short tour of duty on a corner where the air is very bad should be followed by one in the suburbs. The city political bosses will be glad to have this information for use following the next election. Policemen and taxicab starters should not be kept on long assignments at certain depots.

The remainder of us can worry along on a diet of automobile smoke for a while.

Fig. 1.—Gas refrigeration in the home

Gas Refrigeration*

ARTICLE No. 2

THE time was when heat, as we know it, was a luxury in dwellings. The time has passed when refrigeration was considered a luxury. Both are now public necessities. There are many who would agree that refrigeration has a far greater beneficial effect upon public health than heat during the cold season. Without the use of the commercial refrigerator, the balanced menus of the world would be impossible. A survey made by the Department of Agriculture in 1925 showed the extent of use of commercial mechanical refrigeration as indicated by the following figures:

	No. of Concerns	Refrigerated Space, Cu. Ft.
Public cold storage	416	242,563,913
Private cold storage	264	24,065,827
Combined public and private	212	57,034,780
Meat packing establishments	397	246,165,622
Meat packing establishments doing a public business	34	56,837,608
Total refrigerated space	1,323	626,667,750

Cold storage warehousing facilities represent an investment of $200,000,000.

But a refrigerator is also needed in every home to preserve food in suitable condition. The readers of "Domestic Engineering" would do well to stop a moment and ponder over the probable developments and profits of this new industry.

We are living in an age of miracles—in a land of scientific magic—with its chairs that flop into beds and bags that suck up dirt. Daylight any night just by pushing a button,—streams of hot or cold water that never stop until you turn off the faucets,—little brainless wheels on gas ranges that can control the temperature of the oven even more accurately than the best cook that ever lived,—discs that sing any song desired,—men and events long since in the distant past that parade before us on a silver screen, and speaking and singing cones of paper controlled by artists thousands of miles away, startle us not a mite more than the latest creation of science, an apparatus that turns heat into cold, the refrigerator operated by gas.

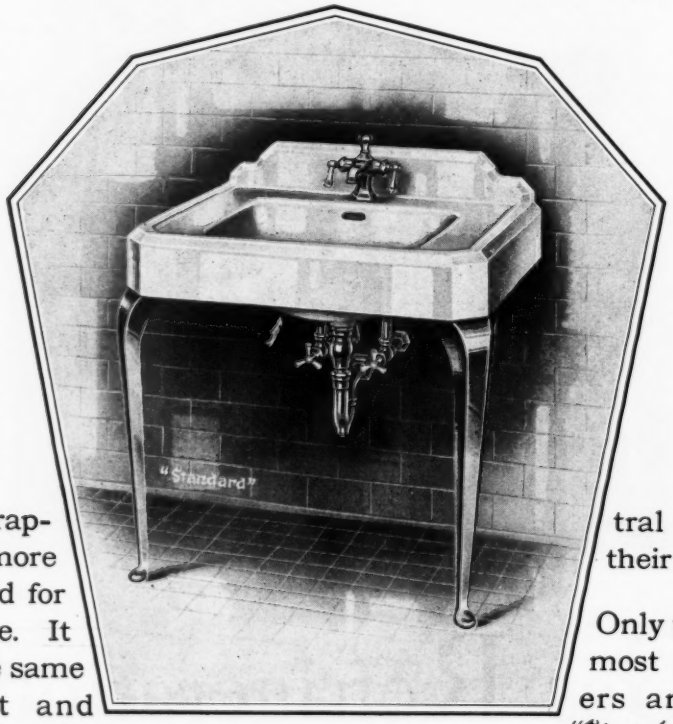
SEVERAL TYPES OF GAS REFRIGERATORS

SEVERAL types of gas operated refrigerators are now on the market. In these refrigerators—utilizing the absorption principle—a more direct and efficient application of energy is sought than in those using the compression principle (electric types). It is the opinion of many engineers that the absorption type (gas fired) will survive the best of the compression types if for no other reasons

*Much of the information given in this was abstracted from data which appeared in "Natural Gas," published by the natural gas department of the American Gas Association.

"Standard" Lavatories of Style

Individual--Original



The bathroom is rapidly becoming more than a room used for convenience alone. It is being given the same careful thought and planning for decorative arrangement as is being given the other rooms of the home. Many home-builders in *your* neighborhood will want "Standard" Styled Lavatories as the central decorations for their new bathrooms.

Only the genius of the most capable designers and the skill of "Standard" craftsmen, gained through years of successful manufacture of plumbing fixtures, could possibly have developed lavatories as beautiful and as convenient as these.

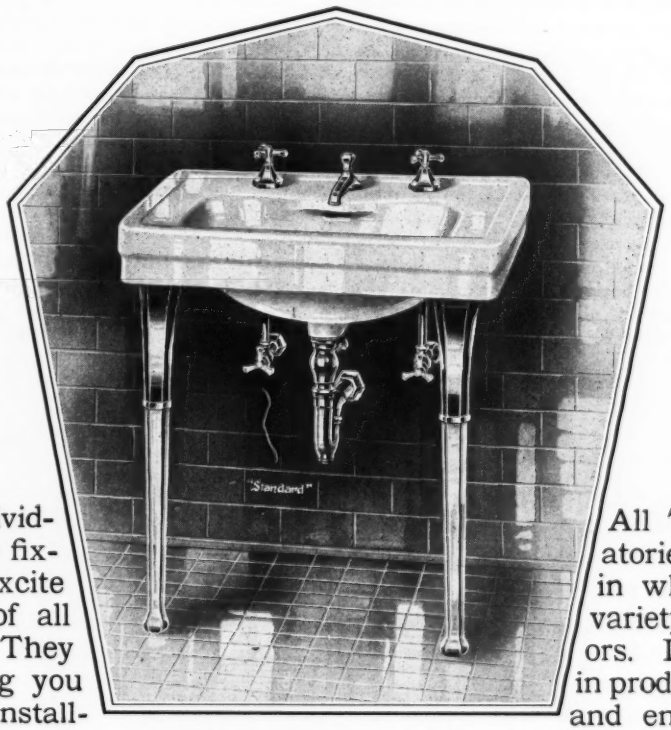
The Castleton

An integral fitting of Chromard for the Castleton.

"Standard"
PLUMBING FIXTURES

Designed for the Modern Bathroom

Decorative -- Colorful



The Chesterton

Original and individual, these styled fixture designs will excite the admiration of all your customers. They will quickly bring you a reputation for installing fixtures that are new and different.

The Castleton and the Chesterton, along with the more decorative Templeton and Pemberton, are all dressing-table designs of "Standard" Styled Lavatories.

All "Standard" Lavatories are obtainable in white, black or a variety of beautiful colors. Long experience in producing both china and enameled fixtures assures your customer that any "Standard" China Lavatory in color—either of the staple or styled designs—will offer a more perfect match with the enameled fixture than any other make.

Standard Sanitary Mfg. Co.
PITTSBURGH

Mastercraft fittings for use on the Chesterton.

"Standard" PLUMBING FIXTURES

than these two most important features—economical and quiet operation.

Should Also Understand Principles of Electric Refrigeration

It is expedient, however, that the contractor also understand the principle of the electric refrigerator exploited by the electrical industry. The electric refrigerator is a competitor of the gas refrigerator. The gas refrigerator is distinctly in the plumbing and heating field and is exploited by concerns who propose to market their refrigerators through the master plumber and heating contractor.

Nearly all present electric refrigeration units are of the "compression" type, in which a fixed gas is compressed, cooled until it becomes a liquid, and is then expanded into a cooling coil by releasing the pressure on the liquefied gas. The expansion of the gas absorbs heat from surrounding objects and produces the refrigerating effect. After expansion, the gas is returned to the compressor, again compressed and liquefied ready for the next cycle.

There are several gases used for these small refrigerators, sulphur dioxide, methyl chloride, ethyl chloride, carbon dioxide and butane, but the most commonly used is sulphur dioxide. Sulphur dioxide can be liquefied at a much lower pressure than the ammonia gas used in large plants, and is much safer in the hands of inexperienced persons. It liquefies at about 60 pounds per square inch pressure at ordinary room temperatures, and upon expansion produces very low temperatures.

The compressor is a small electric motor-driven type generally air-cooled, and takes from one-quarter to one-half horsepower in ordinary installations. The compressor discharges the gas into the "condenser," which is simply a pipe coil where the heat of compression is graduated, so that the compressed gas will return to liquid form. At the expansion valve, the pressure is released and the half liquid and half gaseous mixture passes into the "cooler," or evaporation coils, where the evaporation and expansion of the gas absorbs heat. Such units are now made in various sizes, produce from 25 to 250 pounds of ice per day, or else the cooling effect of that many pounds of natural ice.

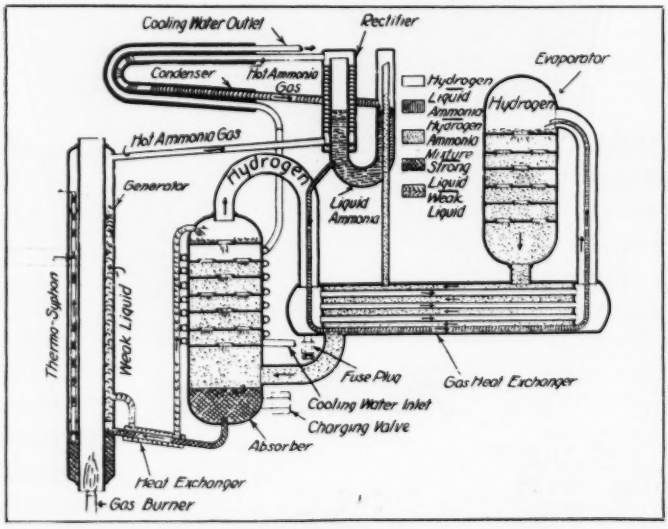


Fig. 2.—Diagram of one type of gas refrigerator units

THE FIELD FOR DOMESTIC REFRIGERATION

THE FIELD of domestic refrigeration is enormous and scarcely has been touched. There are 26,000,000 homes in the United States and 12,000,000 ice boxes, while gas users number about 10,000,000. It is probable that an estimate of the number of household gas-operated machines which could be marketed within the next five years would not be far from 2,000,000 units.

While the household clearly promises to be a highly interesting field for the exploitation of the small refrigerating unit, it is worth noting that the commercial field offers attractive possibilities. The florist shops, butcher stores, grocery stores, lunch rooms, restaurants, candy stores; the ice cream retailers, soda fountains, drinking water fountains are all potential users of the gas-operated or other refrigerating units. The commercial field is more concerned, moreover, as compared with the householder, with operating expenses; the low cost of refrigerating by gas, or other fuel, combined with lower initial cost of the installation, longer life, and less service, makes this type of refrigerating unit interesting, to user and producer.

The ice cream industry, which in 1925 dispensed a total of 323,000,000 gallons of ice cream, or nearly three gallons for every man, woman and child in the United States, had in use about 60,000 motor-compressor refrigerating units. The immediate market for units to refrigerate ice cream cabinets is probably over 200,000 and the demand for a really long life service-free unit is tremendous. The future will probably see ice cream trucks mechanically refrigerated, saving much of the large costs in transportation and distribution which the industry is compelled to sustain at present.

SOME HISTORICAL POINTS ON GAS REFRIGERATION

VON PLATEN and Munters were two students at the Royal Technical School in Stockholm, and in preparing for their graduation thesis developed and designed a working model for a refrigerating device. The two students graduated in June, 1922, and on August 18 of the same year the first patent application was filed in Sweden. It is seldom that a new invention has met with such rapid development as occurred in this case. Within three years the original model was modified and developed, so as to give a commercial and salable refrigerating unit. In the year 1925, a large number of refrigerating machines were placed in commercial service. During the year 1926, about five thousand units were turned out and placed in service in Sweden.

The idea was brought to the United States. The original machine was naturally designed for Northern European service, where extremely cold cooling water and moderate room temperature are encountered. The machine was placed on test to develop its practicability for American service, but it was soon found that certain changes would have to take place in order to bring the machine up to American requirements.

The original ice melting capacity for the Swedish machine was about forty-five pounds per twenty-four hours, while its thermal efficiency was about 18 per cent. The Swedish public were apparently content to utilize a manually controlled machine, the control simultaneously regulating both gas and water. It was found that in order to make the machine salable in this country it would have to be designed so as to operate and give sufficient refrigeration where room temperatures of 100 degrees F. and cooling water of 90 degrees F. were encountered. It further had to be developed so that the machine would

The Plumbing Primer

"Now Wil-bur-force, we shall see some-thing in-ter-est-ing."

"What is that, Le-roy?"

"We shall see a man drown him-self."

"O good-y! But who is this de-spond-ent gentle-man?"

"He is a Mas-ter Plumb-er."

"Why is the Mas-ter Plumb-er de-spond-ent?"

"Be-cause he has made a dis-cov-ery."

"What, Le-roy, was this dis-cov-ery?"

"The dis-cov-ery was that he could have made a lot more mon-ey last year."

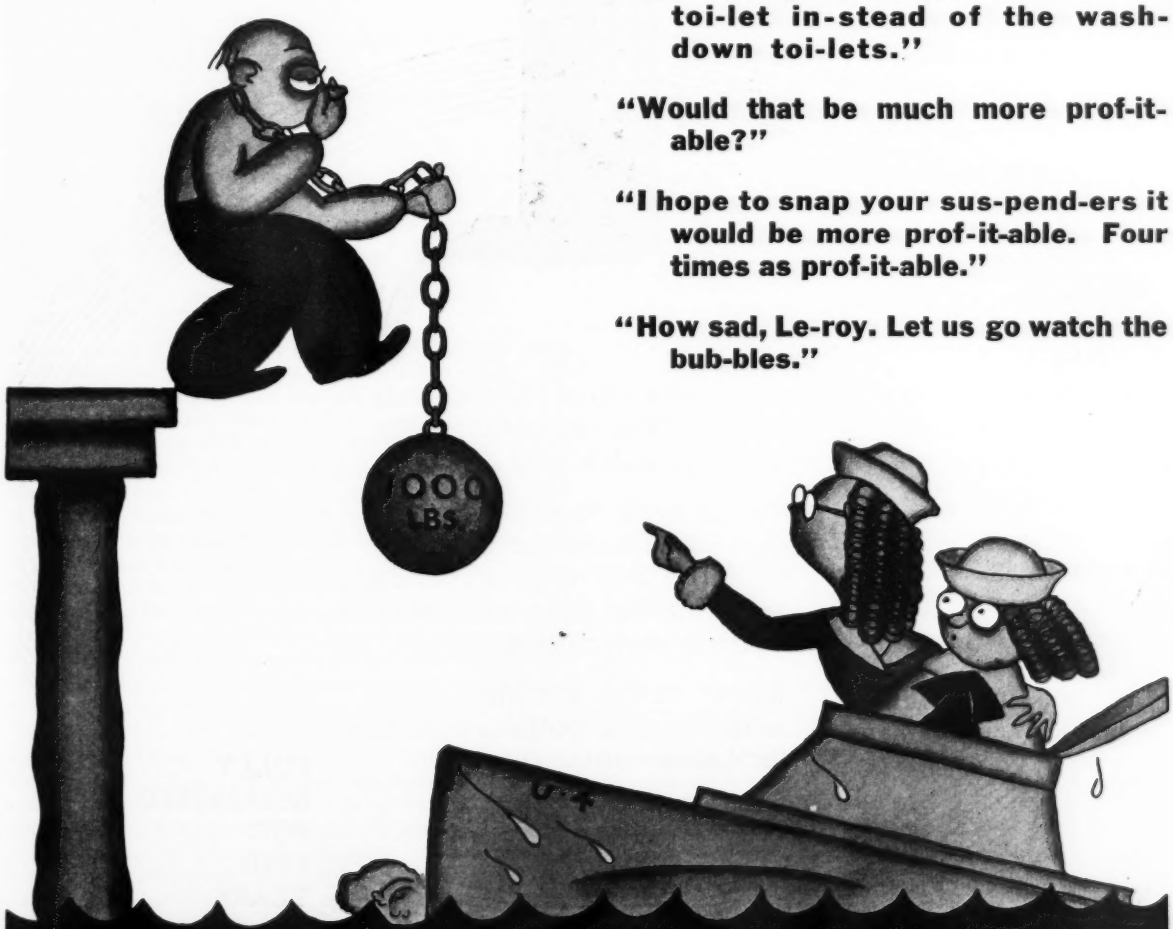
"How could he have done that?"

"By sell-ing the Im-prov-ed Mad-era toi-let in-stead of the wash-down toi-lets."

"Would that be much more prof-it-able?"

"I hope to snap your sus-pend-ers it would be more prof-it-able. Four times as prof-it-able."

"How sad, Le-roy. Let us go watch the bub-bles."



MADDOCK'S *Improved*
MADERA
THOMAS MADDOCK'S SONS CO. • • TRENTON, N. J.

CADWELL

No. 10 AIR VALVES

The operation of the Cadwell No. 10 Non-adjustable Air Valve is quick and efficient.

The instant steam comes in contact with the thermostatic float, the diaphragm expands and lifts the float and valve pin into seat, closing valve.

These valves are also made with ⅛" or ¼" bottom outlets for quick vents.

Ask your jobber

FULLY GUARANTEED FOR FIVE YEARS

The
BEATON & CADWELL MFG. CO.
Established 1894
NEW BRITAIN, CONN.

give all the desired refrigerating effect automatically.

A laboratory was established in Brooklyn where exhaustive developments were made by united efforts of engineers of the American and Swedish companies. During the next year these men redesigned the machine and obtained an increased efficiency.

Since the efficiency and capacity increased with the increase in B.t.u.'s furnished to the unit, it was necessary to control the heat input so as to get a predetermined refrigerating effect. Using gas of 540 B.t.u. per cubic foot heating value, the minimum gas required to assure satisfactory action was 1½ cubic feet per hour and this had to be increased to a maximum of 3 cubic feet per hour when maximum refrigeration was desired.

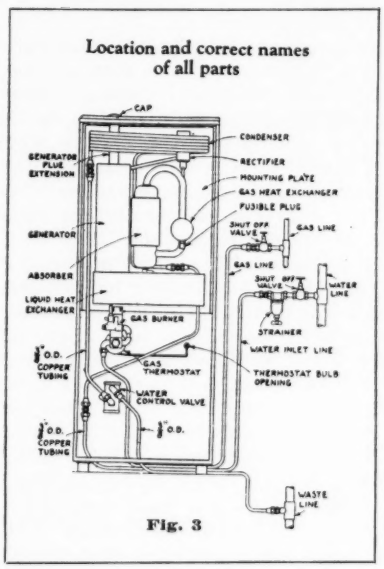


Fig. 3

This necessitated, therefore, the development of a burner that would burn satisfactorily between the ranges of 1½ cubic feet and 3 cubic feet per hour. It was necessary, also, that the burner be of the safety type so that, if for any reason the gas flame were extinguished, the gas supply to the burner would be automatically shut off. The first burner developed possessed these characteristics, but was designed for a gas pressure of about 2½ inches of water and 540 B.t.u. gas. In order to adapt the refrigerating units for use in districts where gas pressures and B.t.u. values vary considerably, it was necessary to develop burners suitable for water-coke-oven and natural gases and to test and approve gas pressure regulators.

Thermostatic Control

As the minimum gas required at any time is 1½ cubic feet per hour, the gas thermostat was designed to always allow that quantity of gas to pass to the burner, but when regulating the gas supply to gradually augment the flow to a maximum of 3 cubic feet capacity. The thermostat is of simple construction, easily set and adjusted. It consists of a six-inch bulb located within the food chamber. The operating mechanism of the thermostat is located in the machine compartment. The bulb and operating mechanism are inter-connected by capillary tubing. The bulb is partly filled with a liquid which when expanded into a gas creates a pressure which acts through the tubing against a diaphragm located in the body of the thermostat.

It was soon discovered that after a certain amount of cooling water has been used, further increase in water consumption becomes unnecessary and wasteful. It was believed that any water control developed should be designed using as a controlling factor a predetermined cooling water outlet temperature. Such a device was developed and with the outlet water temperature maintained at 90 degrees F. the water consumption was practically halved as compared to that which was used prior to development of this water control.

Construction of Machine

One machine unit comprises the generator, evaporator, absorber, rectifier and gas heat exchanger, made of heavy steel tubing inter-connected by steel pipes, all joints being oxy-acetylene welded. This produces a completely sealed unit designed to prevent danger of leakage. The units are designed to withstand a pressure of 3,100 pounds per square inch, although only about 200 pounds charging pressure is used. A certain proportion of the run of units are tested to the 3,100 pound pressure at the factory. Every unit is subjected to a high pressure test of at least 1,200 pounds in order to detect any possible imperfections in the welding.

When first brought out into production, 250 sample boxes of this type were sold to the various gas and public utility companies for the purpose of having them conduct tests and determine if the machine and box were what they desired and did what was claimed they would do. The machine is suitable for apartment house service, especially in large and congested cities.

The unit may also be used in special boxes of varying sizes, built to fit into particular niches, which seems to be a growing demand in new apartment house construction. There has also been designed a combination of gas stove and refrigerator where a gas stove is mounted on a refrigerator box, the same gas service line serving both.

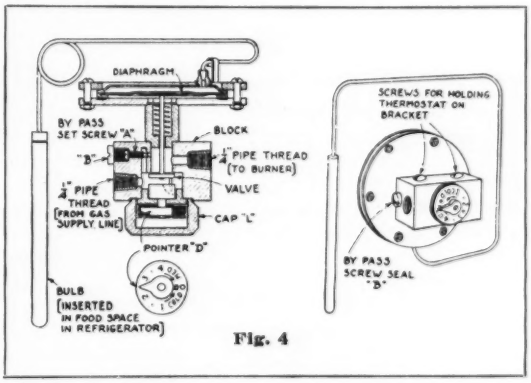


Fig. 4

There are no mysterious or revolutionary chemical or physical principles involved in gas refrigeration. The refrigerator is operated by an ingenious combination of simple physical laws and processes known to mankind for a hundred years or more. It is not, in the every-day meaning of the word, a machine, but a simple combination of containers with connecting piping.

Refrigeration is accomplished in four distinct steps, successively, and in the order named: Distillation, condensation, evaporation and absorption—all of which have been described.

The whole equipment, so far as the refrigerating section is concerned, is contained within a closed circuit of a set of small containers, and their connecting piping. The contents of the system are ammonia, water and hydrogen, and, by the application of heat, a continuous cycle of operations is set up, which creates a freezing temperature at one of the containers. The heat applied may be gas or any other convenient fuel, but with gas this refrigerator enjoys its greatest operating and maintenance efficiency.

The principle of operation will be clearly understood if the diagrammatic illustration, Fig. 2, is consulted while studying the textual description.

Before starting the refrigerating cycle the refrigerant and its absorbing medium (a mixture of ammonia absorbed in distilled water) is contained in the generator and the lower part of the absorber and the immediate connecting piping. When heat, such as produced by a small gas flame, is applied to the generator, the liquid contained therein begins to boil, and the ammonia (in a gaseous form) is driven off with some traces of water vapor. This vaporous mixture passes from the generator through an inclined tube to the rectifier or water separator and thence to the condenser coil, which, when a certain pressure is reached, due to the cooling action of water

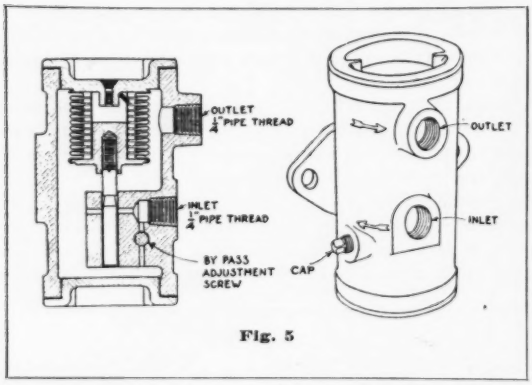


Fig. 5

passing through another coil welded intimately to the ammonia condensing coil, the ammonia gas is condensed, the liquid so formed draining directly into the "U" shaped tube of which the rectifier is a part.

The liquid ammonia accumulates in this tube and flows into the liquid ammonia pipe, which passes through the hydrogen pipe, heat exchanger, and so to the upper part of the evaporator.

When the level in the "U" shaped tube has risen sufficiently, the liquid ammonia begins to flow into the evaporator, and no further rise of level can take place in this tube.

As previously pointed out, the ammonia gas leaving the generator contains a small amount of water vapor, and this water is removed before the gas reaches the condenser. As the ammonia and water vapors leave the heated liquid in the generator, they are at a comparatively high temperature, and the water is removed partly by the effect of the baffle plates in the rectifier, and finally by the cooling effect of the ammonia in the "U" tube part of the rectifier.

Constant Temperature

The warm vapors, in passing through the rectifier, necessarily raise the temperature of the liquid ammonia in the "U" tube a few degrees and cause it to evaporate. The gas so formed passes into the condenser, where it is again cooled and recondensed. No further rise of temperature of the liquid ammonia takes place, the liquid thus being kept at a constant temperature by its own evaporation. The "U" tube part of the rectifier thus forms a cooling device at a fixed temperature for pre-cooling the ammonia gas, and also for purifying or rectifying it by condensing the water vapor before it enters the condenser.

The water thus condensed drips back into the generator. It will be seen that only so much of the liquid ammonia as is required for removing the water vapor passes into the rectifier, the remainder flowing into the evaporator, falling onto one of the upper discs which are provided with perforations through which the liquid ammonia falls from disc to disc, spreading out in a thin film, and in this way exposing a very great surface of liquid ammonia and thus promoting rapid evaporation. The evaporated liquid ammonia mixes with the ever-present hydrogen.

The conversion or evaporation of the liquid ammonia to the gaseous state in the evaporator results in a great lowering of the temperature of the evaporator, which, in turn cools the aluminum radiator attached to it and also the contents of the chamber or refrigerator box in which it is situated.

The temperature obtained depends upon the pressure of the ammonia gas; the lower this pressure the lower will be the temperature that can be obtained. However, after a short period of operation this system, so far, without some form of expansion or check valve, would become inoperative due to the equalization of generator and evaporation pressures. So a regulator was provided by the introduction of hydrogen, an element or constituent of nearly all combustible compounds.

The total pressure in the evaporator always is the same as in the generator, but by introducing sufficient hydrogen to produce the greater part of this total pressure, the ammonia gas pressure can only be equal to the difference. A reduction of the ammonia gas pressure, with a consequent lowering of temperature, is thus obtained by allowing the liquid ammonia to evaporate continuously and unhampered by excessive vapor pressure. The continuous operation of this system depends, therefore, upon the simple and infallible Dalton's law of partial pressures.

Mixture Heavier Than Hydrogen

The mixture of ammonia and hydrogen in the evaporator being heavier than hydrogen alone, tends to sink to

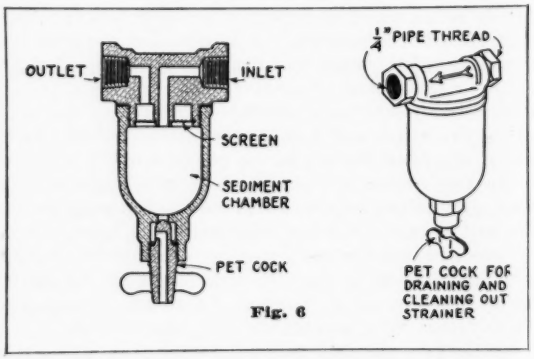


Fig. 6

the bottom of the evaporator, from which it is conducted through the horizontal compound tube designated in the diagram as a heat exchanger into the lower part of the absorber.

GASES INTENSELY COLD

WHEN these mixed gases leave the evaporator they are intensely cold and, in passing through the heat exchanger, an exchange of heat takes place, the warmer hydrogen coming from the absorber being noticeably cooled before it enters the evaporator. The heat exchanger, as may be imagined, contributes to the efficiency of this refrigeration system. Without its aid, the hydrogen entering the evaporator would be comparatively warm, and the evaporating ammonia would have to cool this gas in addition to its allotted work—cooling the evaporator and its appurtenances. In other words, the refrigerating possibilities of these mixed gases, which would otherwise be

YOU WOULDN'T BANK *YOUR* MONEY IN AN OLD TIN POT

AND by the same token you can't afford to trust your reputation to the doubtful performance qualities of the common run of fittings.

Your reputation for making quality installations depends not only on your ability as a conscientious craftsman but on the quality of the materials that go into the job. And since pipe fittings are the "vital connecting links" in the installation, it's an evidence of sound judgement to insist on fittings that have established a record for consistently fine performance on the job.

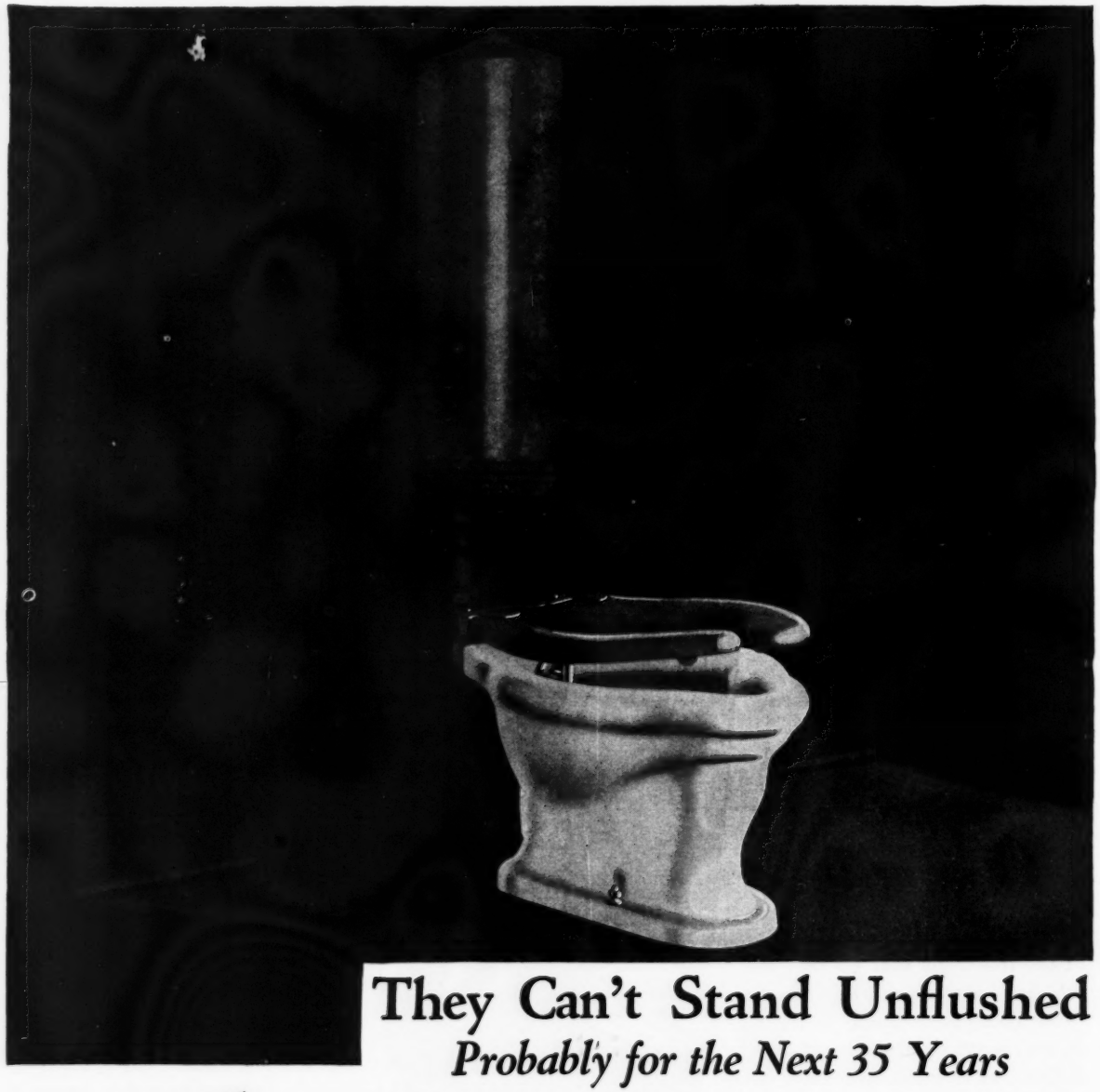
The strength, the accuracy of Square "Gees" insure a quality installation. And their ability to "come easy and fit tight" speeds up the job, lowers labor costs and earns profits for you.

Your fitting problem is solved when you say Square "Gees."

The GRABLER MFG. COMPANY
and its subsidiary GRABLER-REPUBLIC, *Inc.*
4900 EUCLID BUILDING . CLEVELAND, OHIO
New York . Chicago . San Francisco . Los Angeles

SQUARE Pipe "GEE" Fittings

MALLEABLE, CAST IRON DRAINAGE, BRASS



They Can't Stand Unflushed

Probably for the Next 35 Years

Unflushed closets are filthy, dangerous headquarters for filthy, dangerous insects, smells and germs. Clow Madden Automatics *never* stand unflushed.

Each time, *each time,* no matter how many times they are used . . . Clow Madden Automatics flush themselves. They're Automatic. They can't stand unflushed.

Each time, a deluge of water whirls away all waste. Each time, the bowl is purged of taint. And Clow bowls co-operate with water. They have no bumps or hollows to cause eddies.

Simple, sure, strong, describe the Clow Madden Valve [it has no by-passes, floats or temperament.] It's sensible about water . . . never wastes it . . . never stints it.

Sanitation follows Clow Madden Automatics — through thirty-five years and sometimes more. Water bills become easy to pay. Repair bills seldom happen. (Read Record No. 103.) Send for the Clow School Plumbing Booklet.

Record No. 103
In 1908, 28 Clow Madden Automatics were installed. In 1922, there were no repairs to date (14 yrs.). They were then reinstalled in new school building and are now (1928) still going strong. *Location: School, Buffalo Center, Iowa.*

James B. Clow & Sons, 201-299 N. Talman Avenue, Chicago

CLOW MADDEN AUTOMATIC

Forty-Eight Styles, Heights and Types to Meet Your Requirements

wasted, is transferred to the hydrogen passing on its way to the evaporator.

Owing to the absorption of ammonia gas in the absorber, the weak liquid which is continuously flowing from the generator becomes saturated with ammonia, and is then termed "strong liquid." The hydrogen freed from ammonia assumes the total pressure in the upper part of the absorber, and, being lighter than the incoming mixture of gases, naturally rises and is conducted again to the upper part of the evaporator.

It now remains to secure the return of the "strong liquid" to the upper part of the generator. The inventors were confronted with a difficult problem here, owing to the fact that the liquid level is maintained higher in the generator than in the absorber. This problem was solved by a simple but very ingenious device. The "strong liquid" leaves the absorber and is fed by gravity to a

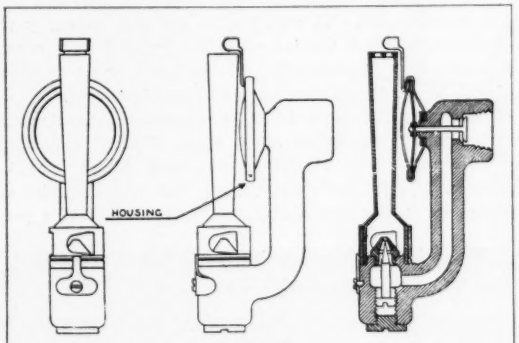


Fig. 7

compartment in the lower part of the generator, which is connected with the top of the generator by a small bore tube. When this compartment is heated the "strong liquid" boils with the resulting formation of bubbles of gas, and these gas bubbles, rising up, carry with them small quantities of liquid still containing considerable ammonia. Indeed, this device is nothing more than an adaptation of an old principle of which the familiar household coffee percolator is a very good illustration.

A pumping action, sufficient to lift the liquid from the absorber to the higher level of the generator is thus accomplished by the simple action of heat, and, with the return of the "strong liquid" to the generator, the cycle of operations is completed.

The cycle then starts over again, and automatically continues so long as the supply of heat is maintained. Thus, without the aid of any mechanical moving parts, this refrigerating system provides for the maintenance of the necessary difference of pressure of the ammonia gas between the generator and evaporator and the complete and automatic circulation of all liquid and gases necessary in the continuous absorption system of refrigeration as follows: (1) A flow of ammonia gas from the generator to the condenser; (2) a flow of liquid ammonia from the condenser to the evaporator; (3) a flow of evaporated ammonia liquid from evaporator to the absorber; (4) a flow of the "strong liquid" from the absorber to the generator; (5) a flow of weak liquid from the generator to the absorber; (6) the circulation of the hydrogen and the mixed gases between the evaporator and the absorber.

This article covers the essential details of the actual refrigeration process; however, this refrigerator is also equipped with an automatic cooling water regulator, a safety gas burner, an automatic temperature control.

While Fig. 2 illustrates the theory of this type sufficiently for most sales arguments, it is necessary to go into more details for the benefit of the installation crew or service men if satisfactory operation is guaranteed the purchaser.

Although a few slight changes in the placement of parts have been made since Fig. 3 was made, it is, nevertheless, essentially correct.

Fig. 4 shows, in detail, the construction of the thermostat, the watchdog of the refrigerator.

The thermostat consists of a 6-inch bulb located within the food chamber 15 inches from the bottom of the inside liner, and 1½ inches from the back wall of the inside liner. The operating mechanism of the thermostat is located in the unit compartment and is connected to the 6-inch bulb by a capillary tube about 18 inches long. The bulb is partially filled with a volatile liquid which exerts a pressure upon a diaphragm proportional to the bulb temperature. This pressure flexes the diaphragm and opens the valve.

The thermostat is equipped with a by-pass valve of the needle type. The thermostat is adjusted to give desired amount which indicates "medium or cold" (medium indicating less gas; cold indicating more gas) should be set as required.

Light the burner and remove valve cap "L" (by hand turning, not a wrench) and turn pointer "D" in a clockwise direction (not more than two complete revolutions). This operation closes the valve so that gas only passes through the by-pass.

The by-pass flame should be about 1½ inches high. If the flame is lower than this, remove by-pass screw seal "B" and give by-pass adjusting screw "A" a partial turn, counter clockwise. This by-pass can be closed entirely, but should be set under normal operation to allow about 1 cubic foot of gas to pass through. The thermostat is adjusted to open the main valve when the refrigerator temperature reaches 42 degrees F. This adjustment permits the main valve to increase the flame, by an additional 1½ cubic feet of gas, giving a 3-cubic ft. flame.

If, due to local conditions, it is desirable to adjust the thermostat for either higher or lower temperatures, the hexagonal cap screw should be removed, and if the small pointer is too high turn screw "A" clockwise to obtain the proper height. Put back seal screw "B."

Turn pointer counter-clockwise until thermostat is wide open, then, by means of burner adjustments, regulate flame to a height of about four inches with as much primary air as possible without producing a noisy flame.

When the bulb temperature falls to 38 degrees F. or a few degrees lower, the flame should be one and one-half inches high. Replace valve Cap "L" by hand (not with wrench). The controller is now set to regulate the flow of gas automatically and maintain the temperature in the food chamber at about 40 degrees F.

Fig. 5 shows details of the cooling-water control valve. The purpose of this water control is to save water. The flow through the condenser is cut down so as to maintain a constant outlet temperature of 90 degrees under all conditions of inlet temperature and pressure.

The regulator consists of a bellows which moves a plunger valve, which in turn throttles the water flow. The unit is made entirely of brass. It is connected on the outlet line of the cooling water system after the cooling water has passed through the condenser. The connections leading from the condenser should be made with a 90-degree ell, having ¼-inch pipe thread at one end and ⅜-inch flare S. A. E. opening for ⅜-inch copper tubing at the other.

(Continued on Page 79)

Plumbing Code for Bowling Green, Mo.

WE HAVE given the code of Bowling Green a thorough reading and feel that for a town no larger than 2,000, the code is much above the average in quality and in its detail.

The sections (1 to 6) governing the examining and licensing of plumbers, issuing of permits, etc., are very complete and we offer no criticism concerning them.

Sec. 10.—We suggest that in the use of drum traps, the outlet be so connected as to prevent entrance of sewer gas and odors when the trap screw is removed.

Sec. 11.—It would be well to specify that the sand trap be vented with a vent passing through the roof of the garage.

Sec. 12.—Wherever there is danger of frost, it is poor practice to use a ventilation cap on the end of a roof pipe, as it makes the closing of the end more likely. Doubtless in Bowling Green frost would never give trouble; however, the cap really accomplishes little good, and our opinion is that ventilation is better without it.

Sec. 13.—This section does not deal definitely with the subject, which is one of the most vital to the health of the inmates. The following regulations taken from the Hoover Code, will cover the subject in a proper manner:

No waste pipe from a refrigerator or ice box floor drain, or any other receptacle where food is stored shall connect directly with any house drain, soil, or waste pipe. Such waste pipes shall in all cases empty into an open sink that is properly supplied with water, connected, trapped, and vented, the same as other fixtures, or they may discharge into a downspout or rain leader trap located inside the building or into a cellar floor drain, but their ends must be left open. Such waste connections shall not be located in inaccessible or unventilated cellars.

Refrigerator-waste pipes shall be not less than 1¼ inches for 1 opening, 1½ inches for 3 openings, and for 4 to 12 openings must be not less than 2 inches, and shall have at each opening a trap, and clean-out at angles, so arranged as properly to flush and clean pipe. Such waste pipes shall be continued not less than full size through the roof, except where such fixtures are located in the basement or first floor, and not on floors above.

Sec. 14.—This section would be improved and made more definite if a water-cooled grease trap were specified.

Sec. 15.—This section is rather weak. It does not mention the type of venting that is demanded. Crown venting should be condemned and continuous, circuit and loop vents specified.

Something like the following would improve this section:—"Every fixture trap shall be protected against siphonage and back pressure, and air circulation assured by means of a soil or waste stack vent, a continuous vent or a circuit or loop vent. No crown vent shall be installed."

Sec. 17.—If the practice followed is to use a main house trap, such a trap should be demanded. We judge, however, that its use is optional. Our opinion is that its use is being done away with to a great extent, especially in the smaller towns.

There should be two cleanouts on the house trap, and instead of taking the fresh air inlet from the trap itself, it should be taken from a fitting on the house side of the trap. The fresh air inlet should not open within 15 ft. of any opening into the house.

Sec. 20.—The word "back-waste" we believe should be "back-water."

Sec. 23.—The condensing tank should be vented by a 2-inch pipe passing separately through the roof.

Sec. 27.—This section makes it appear that the water test is applied after the plumbing system has been entirely completed, whereas the water test cannot be applied as a final test, but is used at the time the roughing is completed.

An 1800-Ft. Welded High Pressure Steam Line

THE ILLUSTRATION shows a plug being welded in an 1800-foot entirely welded high pressure steam line in preparation for the hydrostatic tests. This line runs from the plant of the Cleveland Electric Illuminating Company to the new Union Terminal in Cleveland, Ohio, which is said to be one of the most modern passenger terminals in the world as far as mechanical equipment is concerned.

The problem of a high pressure line to get the steam from a generating station in the terminal building was quite a serious one. It was finally decided to carry the steam through an all welded pipe line located in a tunnel 45 ft. under the street level, and the job was successfully completed by A. R. Brueggeman Co. in Cleveland.

This 1800-ft. line is made of 16 inches outside diameter pipe with a wall thickness of ½ inch. The pipe came in 20-ft. sections. The line was designed for a working pressure of 125 lb. per square inch, but to insure its absolute safety it was tested at frequent intervals at a pressure of 525 lb. per square inch. The testing was done by welding a plug into the end of the partially completed line. Water was then pumped into the pipe until the required pressure of 525 lb. was reached. After testing, the plug was cut out and an expansion joint welded in its place. Under this very heavy pressure, only two pinhole leaks were developed in the welds, and even these pin holes did not appear until a pressure of 425 lb. had been reached.

Plug being welded into line

It is stated that one test showed a tensile strength of 45,664 pounds per square inch at the weld. The test specimen broke in the pipe outside of the weld, indicating that the strength of the weld was greater than the pipe.

Special welding rods were used because an ordinary mild steel welding rod would not have given the necessary tensile strength to stand the hydrostatic pressure test.

Robert Robertson, secretary of the Beverley (Mass.) Master Plumbers' Association, is enjoying an extended trip abroad. Mr. Robertson is expected to tell of many interesting things in his travels through Scotland, Shetland Island, Ireland, England, and Wales. He has been gone since July 6 and is expected to return about October 10.

Milvaco Syphon Air Valve to complete the line

NOW—the Milwaukee Valve Co. introduces the new Milvaco Syphon Air Valve—the result of unlimited experiment and laboratory research—an air valve that overcomes the weaknesses common to Automatic Air Valves.

In line with other Milvaco Products this new valve is constructed of the highest grade materials — rigidly tested and inspected—highly plated and polished—and sold at a price that will beat competition and still show the trade a good profit.

Send For Special Introductory Offer

MILWAUKEE VALVE COMPANY
139-201 Burrell Street, Milwaukee, Wisconsin
Please send me complete information and special introductory sales and profit offer for the new Milvaco Syphon Air Valve.

Name .....

Address .....

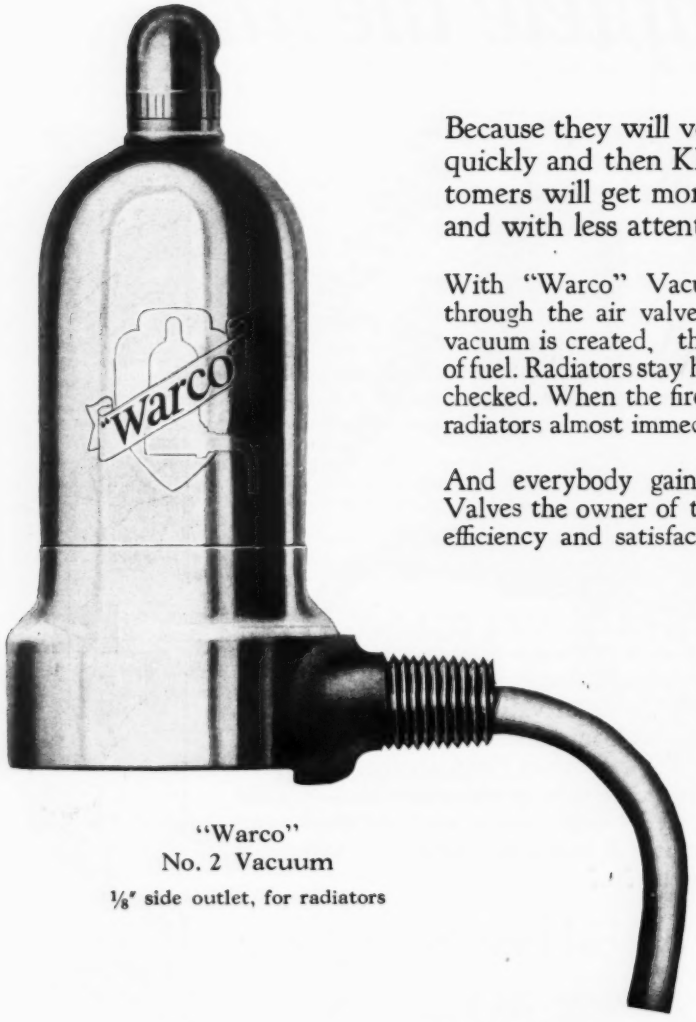
Dept. M

MILWAUKEE VALVE CO.

MILWAUKEE, WISCONSIN

Why "Warco"

TRADE MARK REGISTERED



"Warco"
No. 2 Vacuum
⅛" side outlet, for radiators

Because they will vent all of the air in the system quickly and then KEEP it out. Because your customers will get more heat with smaller fuel bills, and with less attention to the fire.

With "Warco" Vacuum Valves, air cannot return through the air valves. Vapors circulate freely when vacuum is created, thereby reducing the consumption of fuel. Radiators stay hot for hours after the fire has been checked. When the fire is brightened, vapors rise to the radiators almost immediately.

And everybody gains, for with "Warco" Vacuum Valves the owner of the steam plant gets more heating efficiency and satisfaction with smaller fuel bills; the Heating Contractor has a job with more profit in it, and the Wholesaler a bigger volume of business.

Place your trial order with your Wholesaler today and see for yourself the greater all-round heating efficiency of "Warco" Vacuum Valves. Price lists and circulars will be sent on request.

Wholesalers

Have you heard of the "Warco" plan that keeps inventories down?

W. A. RUSSELL & COMPANY

GRAND CENTRAL TERMINAL BUILDING :: NEW YORK

Vacuum Valves?

When installing "Warco" No. 2 on the radiators, put "Warco" No. 3V (for small installations) and No. 6 (for large installations) on the steam mains and risers.

When air is vented from the mains it is not necessary to delay heating the radiators until all the air has been forced from the boiler and mains through the radiator air valves.

This saves fuel too, in fact "Warco" Quick Vents will pay for themselves in fuel saving during the first full season of operation.

"Warco"
No. 6 Vacuum

⅜" bottom outlet, for mains and HV stacks.

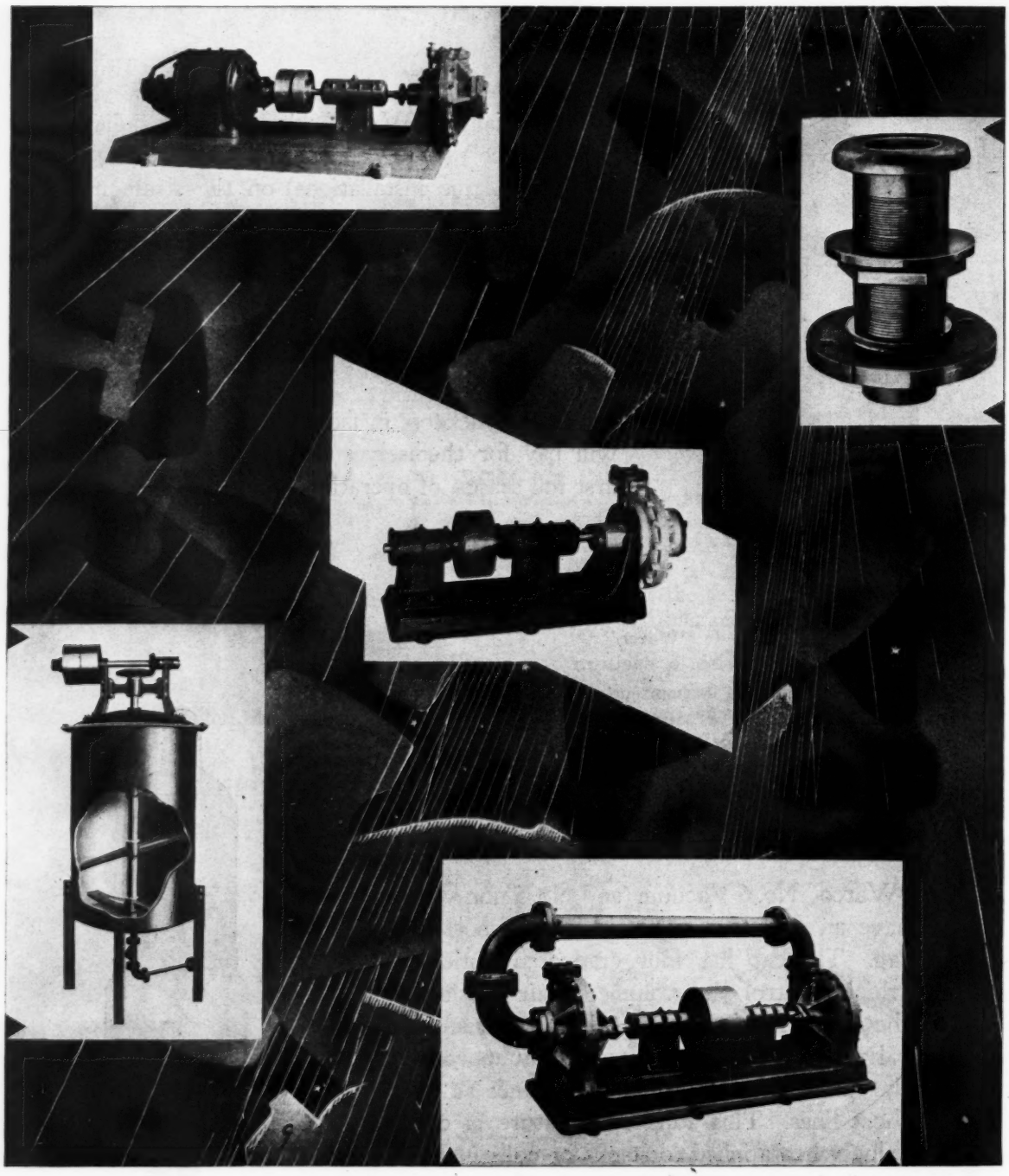
"Warco"
No. 3V Vacuum

¼" bottom outlet, for mains, coils and risers.

"Warco" No. 6 Vacuum (and No. 5 non-vacuum) have an exclusive adjustable outlet port in the cap. The cap has four graduated outlet ports which control the volume of air passing from the steam main. In this way the system may be balanced so as to get steam simultaneously to the radiators at the end of long lines as well as short lines. This adjustable feature is of great value when applied to stacks or coils in heating-ventilating systems. It insures uniformity regardless of variation in the size of stack units.

LEAD — ITS STORY AND ITS USES

No. 19 in a Series of Picture Stories Describing Lead and its Uses in Plumbing and Sanitation



LEAD USED AS ACID RESISTANT— **For many years lead has been used with success as a metal which has acid resisting properties. Lead has a resistance to some acids which makes it a valuable metal in places where acids are used. At the top left is a direct driven hard lead acid pump, and in the center a belt drive pump of the same kind. At the upper right is a lead-lined and lead-covered tank connection which needs no bolts. At the lower left is a cutout section of an inseparably bonded, lead-lined steel acid tank, with lead-covered agitator. At the lower right is shown a hard lead belt driven twin acid pump.**

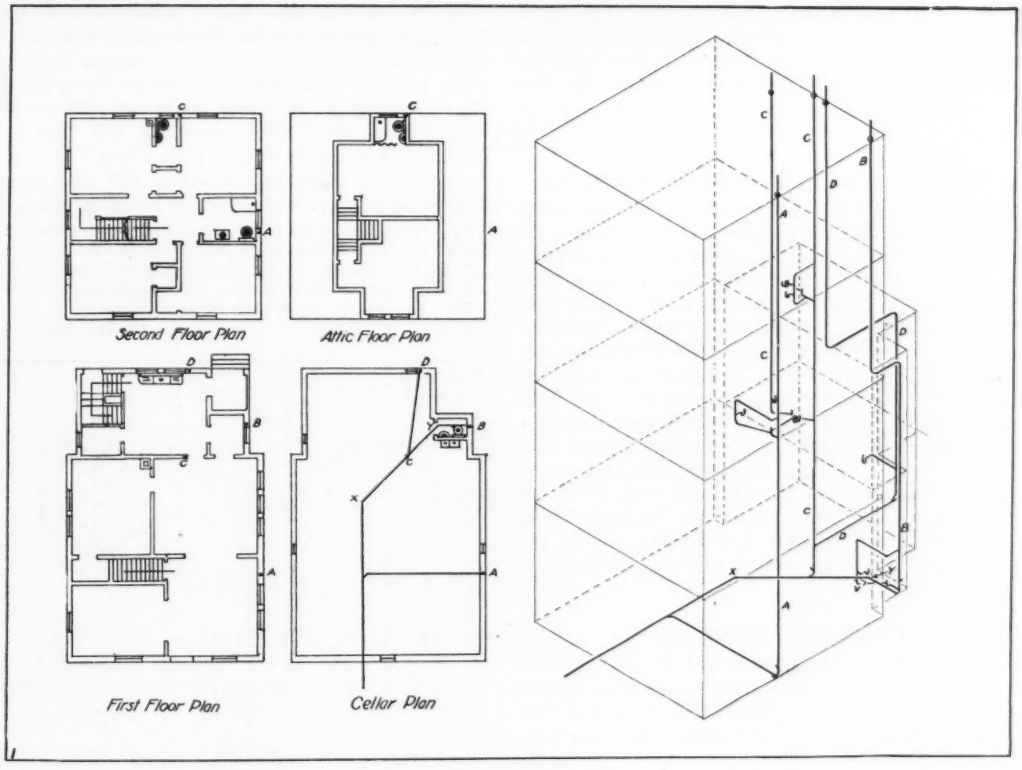


Fig. 1

Which of These Remodeling Jobs Do You Like Best?

NO DOUBT many and perhaps all of the members of the Class have heard something about the Home Modernizing movement as it applies to the plumbing trade.

In these days that we are privileged to live in, we have grown entirely familiar with co-operative movements of one kind and another. During the Great War we saw them in their greatest development and marvelled at the tremendous results for good that they accomplished. We see them now applied to the benefiting of different lines of business, and the Home Modernizing campaign is the one that is probably destined to accomplish most for our own line. We have outlined the purposes of this campaign before, but it will do no harm to speak of it again.

Briefly stated, this movement has been entered into by the various building trades and those furnishing supplies to these trades, to encourage in an organized way, the modernizing of old homes, that is, those homes that have been built for a considerable period. Statistics are available to show the very great preponderance of homes that are without many of the comforts that plumbing of modern type and variety is capable of bringing. It seems that lack of these comforts must be in large measure due to the fact that the plumbing trade has been slow to bring to the attention of people, just how much comfort they can provide for the home. With money generally as abundant as it now is, it is not so much lack of the financial wherewithal, it seems to us, as it is the lack of knowledge concerning what they are missing that yet is available, which is responsible for this condition.

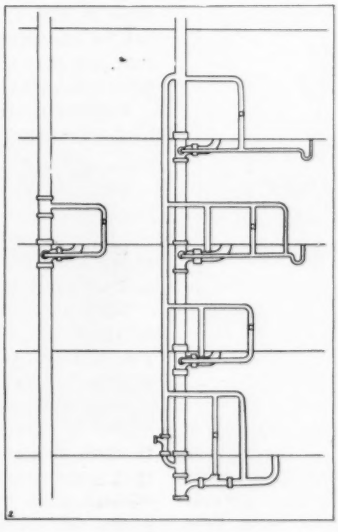


Fig. 2

At any rate, there is a wonderful opportunity capable of being developed by any wide-awake plumbing contractor, for interesting the people of his community in more plumbing, improved plumbing, replacement of obsolete types of fixtures, etc.

The manufacturers and distributors of various electrical appliances, have been wonderfully successful in presenting their goods to the public and inducing them to buy and install the modern comforts which they produce.

Exactly the same opportunity is open to our own trade, and we ought not to fail of turning the opportunity into profitable business. We do not have to depend entirely upon hunting up new buildings to figure on,—we can also look for a big volume of business in the old homes of our community.

HOME MODERNIZING IN PLUMBING PROBLEMS

AS YOU know, for some time we have been submitting problems based on floor plans, calling for the remodeling of completed homes, the addition of new plumbing, etc. We had begun to give out these problems long before the Home Modernizing campaign got under way, but now that we have that campaign to tie up to, to bring us increased business, this particular type of problem fits into the general plan very nicely. If any of our members are endeavoring to ally their own business with this new business movement, one of the best things they could do would be to get hold of past problems that are of this type, study them and work them out in different ways.

We are very much in hope that these drawing problems will be of very definite help to many in the trade who, in their need of more business, are looking to the remodeled plumbing of the old homes of their communities to produce it.

A REMODELING PROBLEM

IN THE May 26 issue, on pages 26 and 27, we gave out one of these problems. The house in question was of common type, of which there are scores in almost any community. Three floor plans and a cellar plan are given,

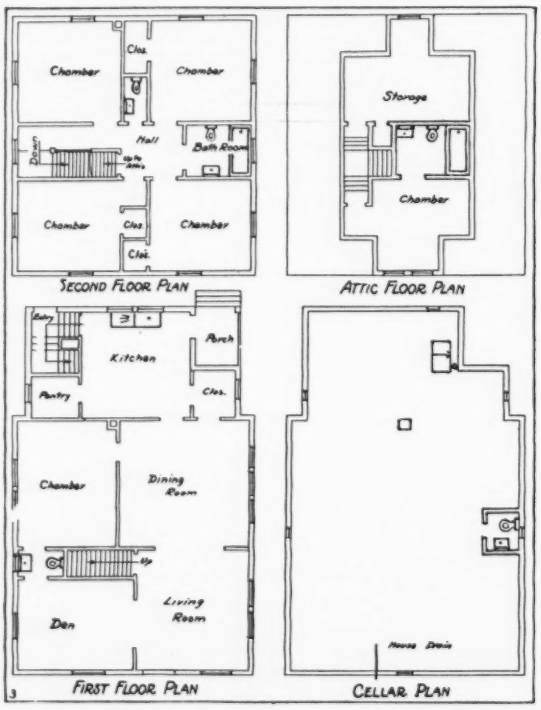


Fig. 3

but plumbing fixtures are not shown on them, although it would be entirely logical to show a sink in the kitchen and the regular three fixtures in the second floor bathroom. That is about the extent that plumbing fixtures are often to be found in houses of this type. Now, however, we want you to find some way of installing a toilet room on the first floor, and a toilet room on the second floor, both having a water closet and a lavatory. On the third floor a bathroom is to be arranged for and in the cellar a set of wash trays and a water closet and lavatory. We appreciate the fact that the house will now be somewhat over-supplied with plumbing, but that is a good failing, and it makes an excellent study.

Those who submitted solutions for this problem are in part as follows, with more to come in a later article:

Fig. 1.—J. H. Meyers Plumbing Co., Greensboro, N. C.
Fig. 2.—Geo. M. Crawley, Jr., Newark, N. J.
Figs. 3 and 4.—C. D. Weber, Covington, Ky.
Figs. 5 and 6.—R. A. Morse, New York City.
Fig. 7.—Walter Biegel, Rochester, Minn.
Figs. 8, 9, 10 and 11.—Wm. M. Glose, Jr., Allentown, Pa.

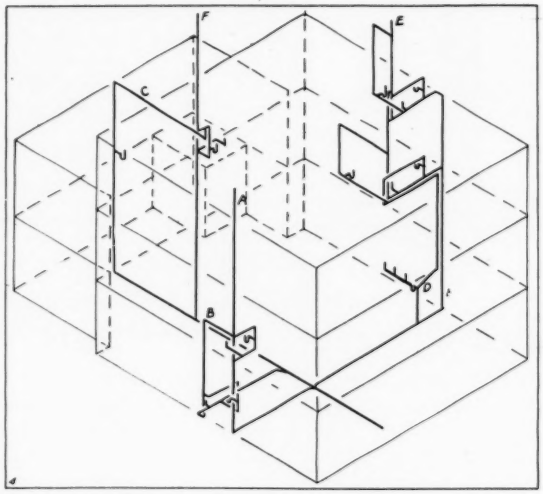


Fig. 4

WELCOME DRAWINGS GOOD ENOUGH TO REPRODUCE

AS THE response to the drawing problems grows, and especially as the submitting of isometric elevations increases, the burden of redrawing most of them so that they may be in proper shape for publishing, has become a heavy one on our art department. We therefore welcome drawings that are so well made and in such shape that they can be reproduced without redrawing. Of this character is Fig. 1. It is needless to say that when drawings can be reproduced without redrawing, they always represent the maker's ideas much more accurately than a redrawn drawing.

Following are our comments on the drawings that have been submitted:

From Greensboro, N. C.

Fig. 1.—In one respect this drawing goes all drawings, that the Class has ever submitted, one better,—it has the official approval of a plumbing inspector. But over and above all that, the layout and the elevation show study and an excellent understanding.

We note on the cellar plan the run of pipe from stack D to stack C. This would cause one to believe that this pipe ran underground, the same as the rest of the cellar piping. Reference to the elevation, however, shows that it runs overhead. Under these conditions it should not be shown as mentioned. Probably the better plan would be to show this run of pipe with a broken line. We believe that some would omit the run entirely, depending upon the elevation to tell the story, but showing the location of the two stacks.

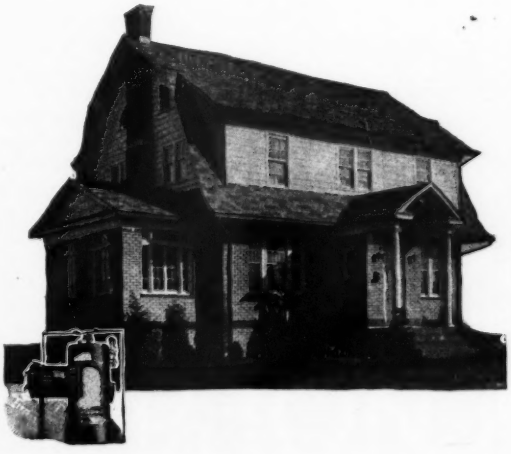
The elevation is very well done indeed. There is one

from Cozy Home to Skyscraper a FITZGIBBONS ***Steel*** HEATING BOILER

in the basement means economical, dependable heat in the building

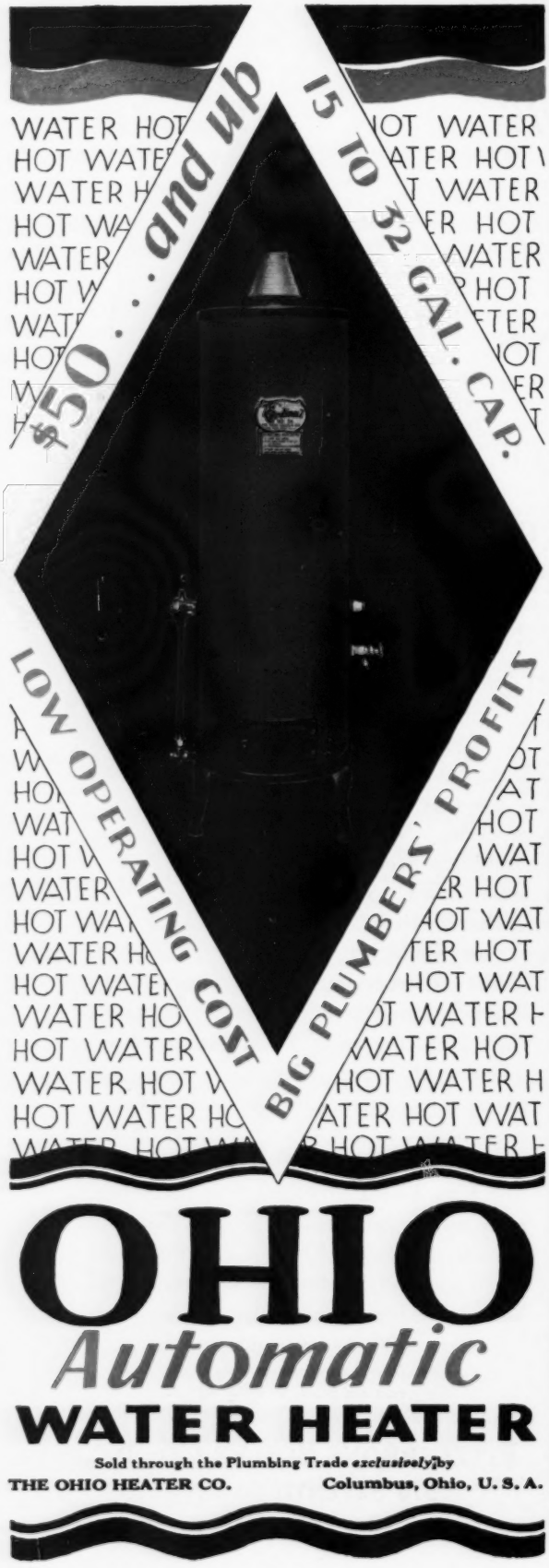
Chamber of Commerce Building, Brooklyn, N. Y.
3-200 H.P. and 1-60 H.P. Fitzgibbons ***Steel*** Boilers.

SINCE 1886 Fitzgibbons ***Steel*** Heating Boilers have been recognized by America's foremost Engineers as pre-eminent in design and superior in construction. Now Fitzgibbons ***Steel*** Heating Boilers and Fitzgibbons ***Steel*** Smokeless Heating Boilers are built in sizes down to 300 sq. ft. Steam Rating, so that all the characteristic advantages of Fitzgibbons scientific design plus modern ***Steel*** construction are available for every building small or large, modest or costly. The cost of *buying* a Fitzgibbons ***Steel*** Heating Boiler, in the medium and larger sizes, is less than that of an ordinary cast iron boiler, and but slightly more in the smallest sizes, while the cost of *owning* the Fitzgibbons ***Steel*** Boiler is much less, since under usual conditions it requires considerably less fuel than a cast iron boiler and is practically free from maintenance expense thruout the life of the building.



Complete information, sizes and capacities will be forwarded promptly upon request.

FITZGIBBONS BOILER CO., INC.
570 SEVENTH AVENUE
NEW YORK, N. Y.


$50 . . . and up
15 TO 32 GAL. CAP.
LOW OPERATING COST
BIG PLUMBERS' PROFITS
OHIO
Automatic
WATER HEATER
Sold through the Plumbing Trade exclusively by
THE OHIO HEATER CO. Columbus, Ohio, U. S. A.

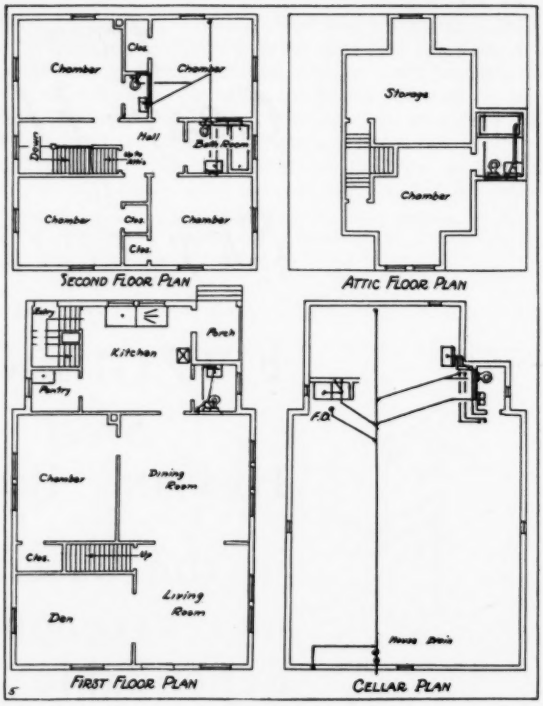


Fig. 5

point in it that illustrates very clearly a point that we have often mentioned,—that in an isometric elevation, dimensions that are parallel to one of the three axes are in their true length, but other dimensions are not true. According to this statement, we might expect that the distance X-Y in the cellar plan and in the elevation would not be the same. If you will compare the two you will find this to be true.

We note that the toilet room on the first floor has been overlooked. The closet off the kitchen would be a good place for it.

The placing of the second floor toilet room and the third floor bathroom show good judgment. The two can make use of the same stack. The cellar fixtures are closely grouped together, but require a separate stack to be carried clear through the roof. A good location would have been at the foot of stack A. This would save the running of a stack, and moreover would have the advantage of a window opening into the toilet compartment, an advantage lacking in its present location. All these considerations need to be taken into account when making plans.

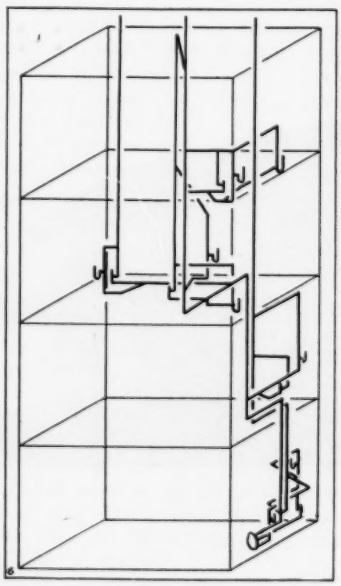


Fig. 6

over 3,000,000
DOLE AIR VALVES
are giving faithful service to 750,000 users

That's a lot of air valves, and the way *Dole* makes them, means a lot of satisfaction to users, and good profits to jobbers and contractors. For years The Trade has known that you cannot go wrong on a *Dole* Product. Well made—nationally used and endorsed.

These are good reasons why *you* should profit by the sale of *Dole Syphon Air Valves*

May we send you full particulars?

Automatic All Metal

Dole

Non-adjustable Thermostatic

SYPHON AIR VALVE

The Dole Valve Company, 1913-33 Carroll Ave., Chicago, Ill.

LEAD PIPE

Easy to install ~

On the job, where the saving on cost of labor is the important factor, lead pipe demonstrates its superiority.

There are always innumerable tight places on new and replacement jobs where the use of lead pipe eliminates many joints that otherwise would have to be made. This alone results in a great saving of time and makes for more economical and better work.

Lead Pipe is easier to install—Use it!

NATIONAL LEAD COMPANY

LEAD
THE EVERLASTING METAL
THAT ONLY A PLUMBER CAN INSTALL

National Lead Co. (Principal Office) 111 Broadway, N. Y. C.
Georgia Lead Co. Atlanta, Ga.
National Lead Co. (Jas. Robertson Lead Works) Baltimore, Md.
Chadwick-Boston Lead Co. Boston, Mass.
National Lead Co. Buffalo, N. Y.
E. W. Blatchford Co Chicago, Ill.
National Lead Co. (Raymond Lead Works) Chicago, Ill.
National Lead Co. Cincinnati, Ohio
National Lead Co. Gibson & Price Co. Cleveland, Ohio
Lawrence Shot & Lead Co. Omaha, Neb.
John T. Lewis & Bros. Co. (Tatham Bros. Works) Philadelphia, Pa.
National Lead & Oil Co. of Pa. Pittsburgh, Pa.
National Lead Co. St. Louis, Mo.
National Lead Co. (Northwestern Works) St. Paul, Minn.
Hoyt Metal Co., Ltd. of Canada Toronto, Canada

From Newark, N. J.

Fig. 2.—An elevation is never able to tell its story acceptably unless accompanied by a plan. A cellar plan came with this elevation, but inasmuch as it did not seem to tie up to the elevation, we have not shown it. The elevation is well made, but we are at a loss to understand just what sort of a layout could be made that would allow all the plumbing in the house, except the second floor toilet room, to be handled by one stack, and have that stack rise straight up without offsetting. Where is it proposed to locate the first floor toilet room and the third floor bathroom?

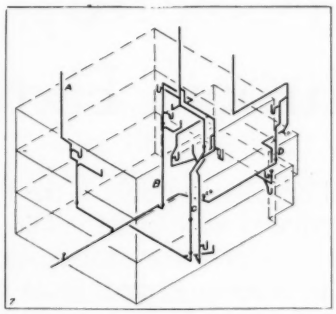


Fig. 7

The question is asked as to whether the third floor bathtub would be subject to siphonage. We haven't any idea how far the bathtub sets from the stack, but if so far that it cannot be stack vented, we think it would be better work to use a continuous vent, with vent connection near fixture.

No doubt the lavatory in the second floor toilet room could be set close enough to the stack to stack-vent it.

If the maker of Fig. 2 would like to send us the floor plans showing how he intends to locate the fixtures, we would be glad to have him do so.

From Covington, Ky.

Figs. 3 and 4.—There are several things that we cannot harmonize between the cellar and floor plans and the elevation. As an isometric drawing, the elevation seems to be laid out on correct principles, and yet we cannot match up all features in the elevation to the plans.

For instance, the cellar plan shows the toilet room at the right, while the elevation shows it at the left and under the first floor toilet room. What seems to be a three-part wash tray is toward the front in the elevation, while a two-part tray at the rear is shown in the plan. There are other inconsistencies which make us wonder whether another set of plans was worked out, and the wrong set sent in. We would like to rectify the difficulty later if Mr. Weber will figure it out for us.

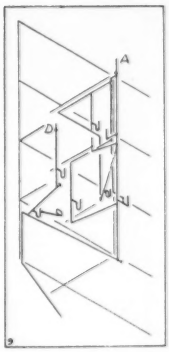


Fig. 9

The handling of the additional toilet room on the first floor is fine, even though it entails the expense of cutting a door through into the den, and a window. An objection to locating the second floor toilet room where it is, is the lack of natural light through a window. An expensive method is chosen for making the third floor bathroom, for it means taking out a partition, putting up two long runs and a short run of partition, putting in a door, and cutting a window through the roof. Also, as here shown, a closet in the storage room is provided for. The expense would probably cause the work to be given up. Methods such as shown in Figs. 1 and 8 would be more advisable. We are very glad to be able to point out these things, for it is to bring such features out that we present the problem.

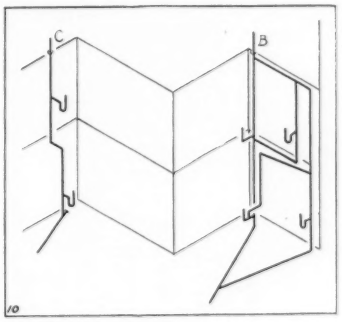


Fig. 10

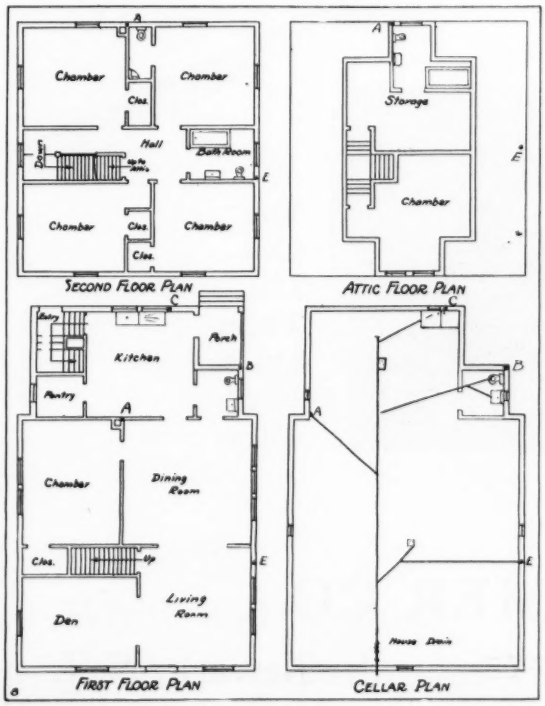


Fig. 8

From New York City

Figs. 5 and 6.—In harmonizing this elevation with the floor and cellar plans we have some difficulty also. The elevation is not drawn in isometric and not in proportion or to scale, and it was difficult to figure out just what was intended to be shown. We have done our best, however. Isometric seems to be superior to other methods, and we hope the maker of this elevation will compare and study some of the isometrics here given. It will help amazingly in working out the next problem.

The elevation apparently does not attempt to show the pantry or kitchen sink, wash trays or cellar piping.

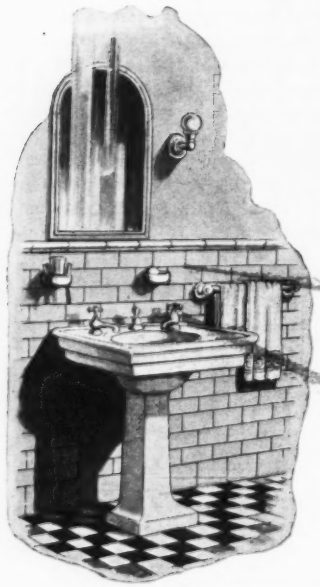
The grouping of the cellar and first floor toilet rooms, so that the same stack can serve them, is good. The second floor layout calls for considerable work under the floor, and we believe methods avoiding this would be better. We wonder if it is realized how expensive it would be to provide for a third floor bathroom as here shown. The expense would be prohibitive. Methods that would call for much less outlay are shown in Figs. 1 and 8.

From Rochester, Minn.

Fig. 7.—There is no set of plans accompanying this isometric elevation, but this lack is made up for in the original drawing that was sent in, by the fact that the

EASY-SET

White and Colored Removable Bathroom Fixtures



AFTER all, the public is the final judge of true merit. The approval of the customer establishes the market, creates sales and supports those dealers who sell what the public wants.

In the case of bath room fixtures, the public wants Easy-Set. They're beautiful, durable—and are removable for washing. Every month the demand increases and, of course, we help stimulate that demand with National advertising.

If you don't stock Easy-Set, you are losing money, and we suggest that you write us today for full particulars.

Use Easy-Set Speedy Tile Drills

We have developed a special drill for installing Easy-Set fixtures which will pierce a standard tile without cracking or binding in a remarkably short time. Write for a trial order.

You Can Lift Them Off and Wash Them

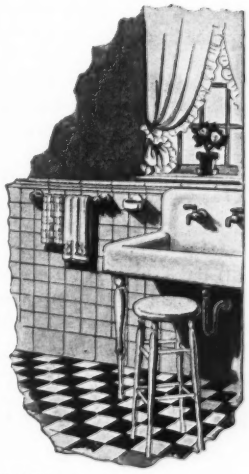
J. H. BALMER CO.

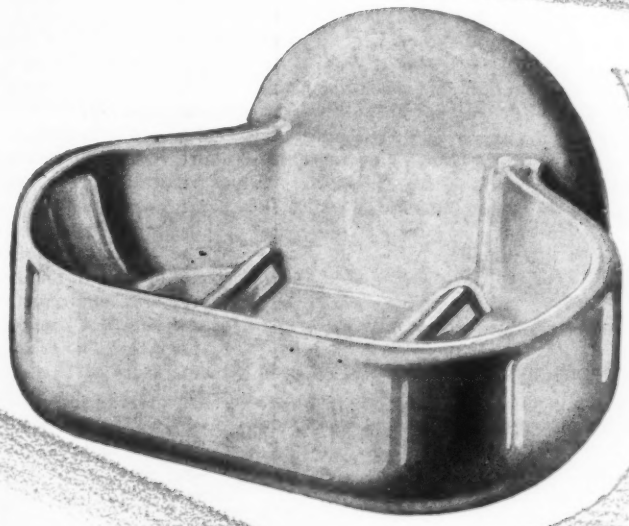
259-267 Plane Street **Newark, N. J.**

-For the KITCHEN, too!

THERE is a vast market for Easy-Set removable china fixtures in the kitchens of America as well as in the bath rooms. Many dealers, by timely suggestion, are doubling their sales of certain items, such as soap dishes, towel bars and hooks. If a housewife is "sold" on having Easy-Set in her bath room, she can be just as easily "sold" on the idea of Easy-Set in the kitchen.

Try it.





EASY-SET
White and Colored
Removable Bathroom Fixtures

outline of the partitions was shown. In reducing the drawing to a small enough size to publish, we were unable to show this detail, which of course added greatly to the value of the drawing. The first floor toilet, which is on stack A in the elevation, was located in the closet off the den. The second floor toilet room was located in the same closet as in Fig. 5, and provision for the third floor bathroom (stack C) was made in a way similar to the Fig. 3 method. Regarding the latter, we feel as previously stated, that this would be an unduly expensive plan. The kitchen sink is served by stack D, and close by it are the wash trays and floor drain, with the cellar toilet room connecting to the foot of stack C.

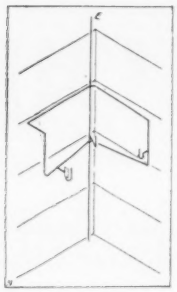


Fig. 11

We regret very much our inability to show in Fig. 7 the detail of the original drawing, which was an excellent one, showing a fine understanding of isometric.

From Allentown, Pa.

Figs. 8, 9, 10 and 11.—A note, accompanying these drawings, points to the fact that Figs. 9 and 10 were taken from the lower left hand corner of the floor plans, and that Fig. 11 was taken from the upper left hand corner. We do not quite see the advantage in viewing stack E from the upper left hand corner. This is perfectly legitimate, as long as information is given as to the way in which it was viewed, but it seems more awkward than the manner of viewing the other stacks. It is clearer to the one using the drawings or working from them, if all views are taken from the same viewpoint.

We like the idea of showing the work in several different elevations.

It is to be noted in Fig. 9 that the connection for the third floor bathtub comes at such an angle as to be rather obscure, but it has to be so shown.

The arrangement of fixtures is fine. Stack A handles the third floor bathroom and second floor toilet room; stack B serves the other two toilet rooms; stack C handles the wash trays and the kitchen sink, stack E being the only stack that is run for just one group of fixtures.

Fig. 9 shows stack A running straight down to the first floor, and there making a long offset. The cellar plan shows where the stack comes down into the cellar. It seems to us it would be better to run it into the open cellar without offsetting.

The Plumbing Problems and Schoolmaster articles are virtually a post-graduate course in plumbing. The Schoolmaster proposes a subject for discussion or a problem for solution. The subject or problem is published in "Domestic Engineering." Readers send in their discussions of the subject or solutions of the problem. The Schoolmaster then comments upon the discussions or the solutions in another article. This plan frequently has been spoken of as the greatest single factor in the advancement in plumbing practice.

Will The Plant Provide Enough Heat?

By J. HAMILTON WALKER

SOME time ago, having occasion to test a vapor heating plant, the question arose as to the rise in temperature in the several portions of the house when the outside temperature was somewhat above zero. The plant had been designed and guaranteed to heat the house to 70 degrees F. in zero weather, and during a cold snap the owner became convinced that the guarantee could not be met and insisted upon a test. As zero weather occurs only at rare intervals in that climate, the above question as to temperature rise above 70 degrees was raised.

A search of handbooks and trade literature failed to locate data desired, and the contractor insisted upon an acceptance of the plant as the temperature was in excess of 70 degrees, although the outside temperature was considerably above zero. The statement was made that the inside temperature rose very slowly compared to that outside.

Not feeling satisfied with the results of the test, a method of calculating the inside temperature for any corresponding outside temperature was sought and was found in the following simple equation:

$$(t_i - t_o)C = (t_s - t_i) \times 1.75 \times R$$

where t_i is temperature inside,

t_o is temperature outside.

C is total B.t.u. loss per degree per hour,

1.75 is coefficient of heat transmission for C. 1. radiation,

R is total radiation in room,

t_s is temperature of steam in radiator.

The coefficient 1.75 is an assumed average, as the exact coefficient varies with the length, width and height of the radiator.

In any case, knowing t_o, C, R and t_s, it is a simple matter to solve the equation for t_i. For example, let us assume an outside temperature of zero, a B.t.u. loss of 357 per degree per hour and a steam temperature of 213 degrees. To heat this room to 70 degrees will require 100 feet of radiation as follows:

$(70-0)\ 357=(213-70)\times 1.75\times 100$ (fractions and decimals omitted).

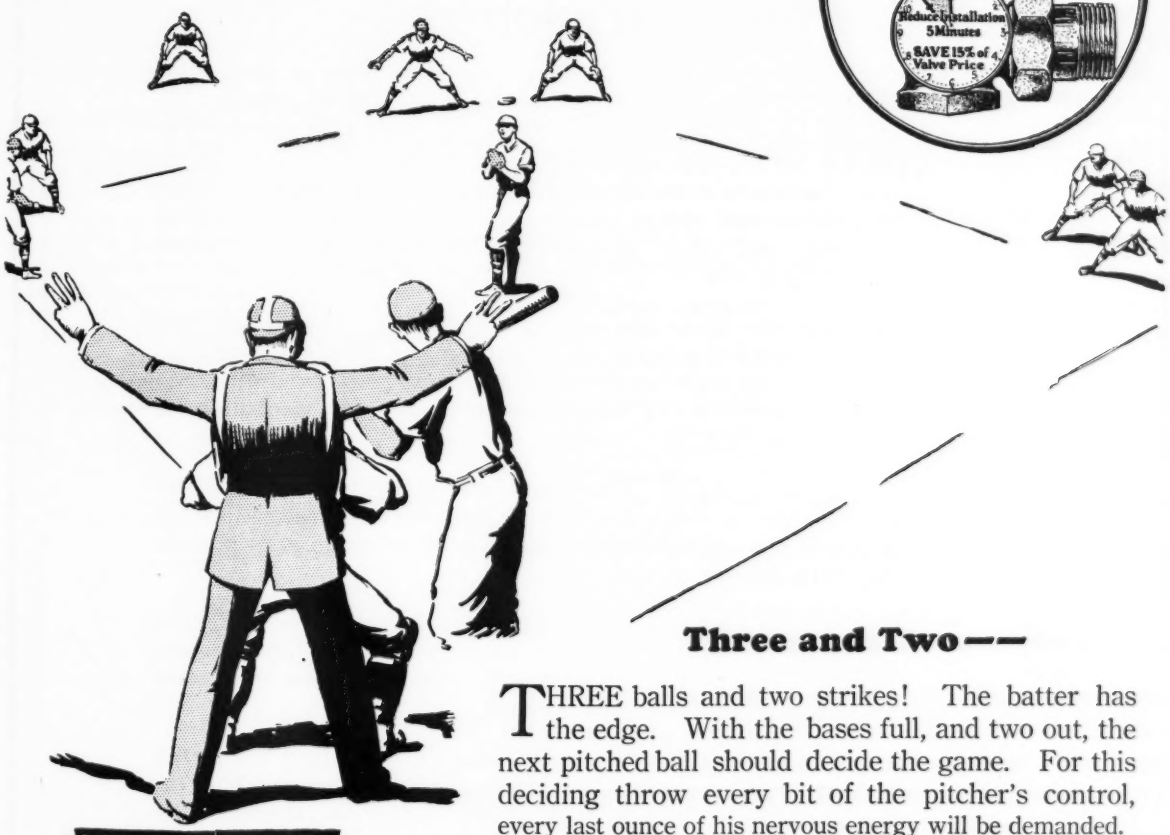
Suppose it is desired to know to what temperature the above room will rise when the outside temperature is 15 degrees above zero. Substituting 15 for the outside temperature and solving for t_i, we find the resulting inside temperature nearly 80 degrees.

The above equation holds good for any type of steam, vapor or hot water system it being understood that the same coefficients must be used throughout for any particular case. For example, if a hot water plant is designed to heat to 70 degrees in zero weather with a maximum temperature of 180 degrees at the boiler and the plant is tested at any lower temperature than zero outside, the temperature on the boiler should be 180 degrees.

The two tables following have been figured on the above basis. One of the tables has been figured for zero to 70 degree conditions and the other for zero to 60 degree conditions.

Outside temperature	Inside temperature	Outside temperature	Inside temperature
— 10	52.8	— 10	63.5
— 5	56.5	— 5	66.8
0	60.0	0	70
+ 5	63.4	+ 5	73.5
10	68.2	10	76.7
15	70.8	15	80. 1
20	74.4	20	83.4
25	78	25	86.7
30	81.5	30	90

There's an EXTRA PROFIT in the Make-Up!



Three and Two——

THREE balls and two strikes! The batter has the edge. With the bases full, and two out, the next pitched ball should decide the game. For this deciding throw every bit of the pitcher's control, every last ounce of his nervous energy will be demanded.

Does it ever seem that your competition is the batter and yourself the pitcher, with the count of three and two against you? Does it often appear that competition does have the edge? Does it not require every bit of your business control, every last ounce of your nervous energy to put over the curves that can't be hit; to strike out competition; to win the game?

But why try to win from competition single handed? You can make your effort less strenuous and more productive by using those materials that give the edge to you, instead of to your competitors, giving you the advantage early in the game, preventing a count of three and two. Ohio Brass Valves are that class of materials. They are designed to save your make-up time; to give you an extra profit; to help you to win the game.

Ohio Brass No 20 Line
Flexitite Gate Valve—Patented
Recommended for pressure up to 125 lbs.

Ohio Brass Company
Mansfield, Ohio
934V

Ohio Brass Co.

NEW YORK CHICAGO PHILADELPHIA PITTSBURGH ATLANTA CLEVELAND SAN FRANCISCO LOS ANGELES

PORCELAIN INSULATORS
LINE MATERIALS
RAIL BONDS
CAR EQUIPMENT
MINING MATERIALS
VALVES

Advertising Is a Specialist's Job

THE man who laid out this ad is a specialist. He knows the printer's types by their first names. He knows how to make your eye travel to the precise point he wants it to travel. He knows how to take the copy for this ad and makes its essential points stand out so that you will "get them" in a glance. He knew just how this ad was going to look in type before he gave it to the printer.

The man who wrote this copy is a specialist. People say that he knows all the parts of speech in the English language. He knows enough six-cylinder words to mix with his one-cylinder words so he has what is known in baseball as a "change of pace."

You are a specialist. You know how much radiation you will need to heat a room of a certain size, etc., and you know all about vents, and soil stacks and the other gadgets in plumbing installations.

The advertising specialists call you in when they want a plumbing or heating job they know will work. They figure, naturally, that you ought to call them in when you want an advertising job that will work.

So, each week in "Domestic Engineering" you find the Retail Advertising Service page. It carries two newspaper ads (using the same illustration in each) a sales letter and a short publicity item, made up by the two specialists mentioned with the help of a third — the artist who makes the illustration.

The cost of that service is $4.20 for twelve weeks. In other words, we charge you 35 cents for the cut each week. We send you a new illustration cut each week and a reprint of the page. All you do is hand them to your local newspaper and your advertising job for the week is finished.

Here's the form that will give you the service of these specialists for the next twelve weeks. After that you'll never want to be without their help.

Tear out and mail this coupon—now!

DOMESTIC ENGINEERING,
1900 Prairie Ave., Chicago

Please enter my order for three months' use of your Retail Advertising Service.

I'm going to advertise!

Name .....

City and State .....

QUESTIONS

ASKED BY READERS AND ANSWERED BY EXPERTS

A HOT WATER SUPPLY SYSTEM THAT DOES NOT WORK RIGHT

Editor, "Domestic Engineering":—I would like to ask you to help me with a hot water return I recently installed, which does not work.

The water heater is in the basement and the bathroom is upstairs in the opposite side of the house.

Without a check valve the water circulates perfectly, but, when they fill the bathtub, the cold water backs up through the return pipe, and by the time there is enough water for a bath, it is too cold.

I installed a check valve, as indicated in the accompanying crude drawing (Fig. 1), and the result is that the water will not circulate, unless it is boiling hot.

It seems to me that this system should work without a

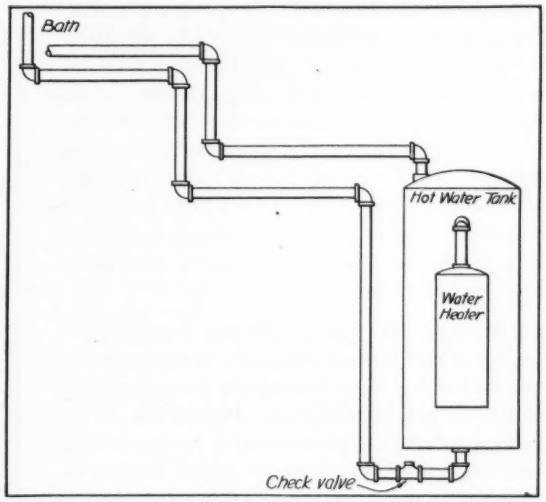


Fig. 1

check valve, and I cannot understand what makes the water back up through the return pipe. Both pipes are ½ inch, but the check valve is ⅜ inch.

I would like to get your advice in regard to this problem.

Ohio. L. R. D.

In view of the fact that the installation of the check valve prevented the flow of cold water to the tub, but makes it necessary to heat the water to an extreme temperature, it would appear as if the trouble lies in the connections at the top of the tank.

Therefore we would check the following: First, we would be certain that the hot water line is connected to the hot water opening in the top of the tank and not to the cold water.

Second, we would be certain that there is a tube in the tank, that it is connected to the cold water supply line, that it is of sufficient length, and that the vent opening is not too large.

Third, that the hot water supply pipes pitch up all of the way from the tank to the bathtub and the return pipes pitch down all the way from the bathtub to the tank. And we would connect this return line to the return pipe between the hot water tank and the lower connection to the gas water heater.

The check valve should have a very light swing check, in fact in many cases a notch is filed in the valve seat so that there will be a little circulation at all times.

WHY FREEZING DAMAGES PIPES AND HOW IT CAN BE PREVENTED

Editor, "Domestic Engineering":—Kindly answer the following questions on your page of "Questions," at your earliest convenience:

1.—Why does freezing damage pipes?

2.—Why does expansion cause the bursting of iron and lead pipe?

3.—How should pipes be located in order to avoid freezing?

4.—What other precautions may help to prevent water pipes from freezing?

Iowa. W. B. L.

1.—The physical principle by reason of which damage from freezing occurs is the fact that water, in passing from its liquid to a solid state, immediately expands about one-tenth in volume. This expansion force exerts a very great pressure upon all sides of a containing vessel or pipe.

2.—Although some opportunity is afforded for expansion within the pipe, this advantage is soon overcome by the friction of the ice upon the pipe walls and the expansive force is thus concentrated at one point. The effect upon iron pipes is to cause the pipe to split lengthwise. In the case of lead pipes the metal may expand sufficiently to allow space for the contained ice. When thawed out the pipe does not contract to its original form and thickness and if the process of freezing is repeated, the pipe will soon burst.

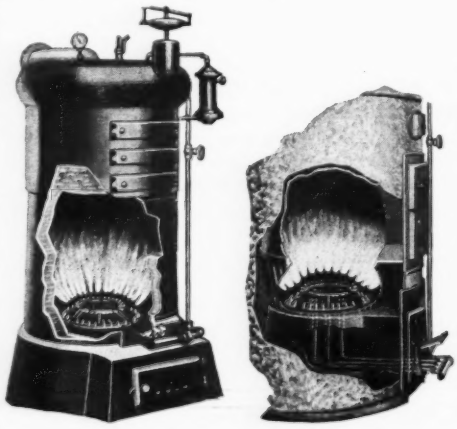
3.—In order to prevent freezing, pipes buried underground should, if possible, be placed below the depth to which frost ever reaches. In a cellar they should be placed on a ceiling wherever possible and away from window and door openings. Rising lines should be placed in partitions rather than in outside walls. For this reason fixtures located on a cold wall may preferably be supplied from the floor rather than from the wall.

4.—The most important provision against freezing is that every portion of the supply line be so graded that the water can be entirely drained from it through the stop and waste cock in the cellars. It is practicable to lessen the damage from freezing by providing at suitable points air chambers in which the air may be compressed so as to cushion the expansive effect of water when freezing. A third means of protecting pipes against freezing is by the use of suitable coverings, such as felt, asbestos, etc. The use of boxes filled with sawdust or any other material, which may become saturated and subject to decay, is objectionable.

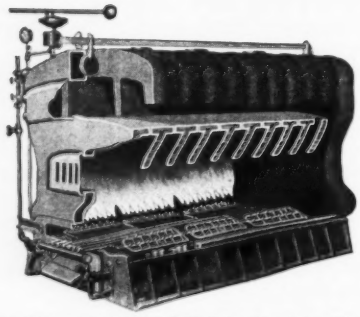
Conversion Work is Done Better With

BARBER Patented JET GAS BURNERS

THERE are many good reasons why you should standardize Barber Burners for *conversion* work. The principle of combustion utilized in Barber Burners is the only outstanding improvement in gas burner design during the last half century. Barber Burners are based upon a scientifically correct principle that develops the highest efficiency of any gas burner operating on atmospheric pressure. Impartial and authoritative tests prove Barber Burners are from 15% to 35% more efficient than other types of gas burners.



On Barber Burners the air and gas adjustment is fixed and automatic in its operation. A premixture of air and gas takes place in the jet tubes, and auxiliary primary air is introduced above the jet tubes where the two flames meet. As the premixture of air and gas leaves each pair of jets, there is an attempt to create a vacuum at the point of confluence of the two flames. At the same time, there is a constant attempt on the part of nature to break up the vacuum, with the result that there is always drawn into the flames *exactly* the amount of additional primary air required to insure absolutely perfect combustion.



Barber Burners are equally efficient on Natural, Artificial or Mixed Gas; develop a flame temperature of at lea t 1960 deg. F. on normal gas pressure; most economical in gas consumption; dependable on all kinds of gas conditions; no adjustable parts; nothing to break or get out of order; no gauzes to clog or burn out; safely act as their own pilot—and can not be made to back-fire.

Barber Burners are furnished in a great variety of designs, sizes and capacities, which renders them exceedingly flexible in their application to the exact requirements of any type of heating device. The correct Barber Burner assembly properly installed, guarantees the user the utmost satisfactory service. Equipped with a Gas Pressure Regulator and Temperature Control, the installation is automatic in its operation.

Correctly specified and properly installed they are absolutely free from service troubles. More than a million Barber Burners are rendering the users the utmost satisfactory service. They will render you and your customers the same high degree of satisfaction.

You are cordially invited to visit our booth at the A. G. A. Exhibition in Atlantic City—October 8th to 12th.

COMPANY MEMBER OF AMERICAN GAS ASSOCIATION

The CLEVELAND GAS BURNER & APPLIANCE CO.
Burner Specialists
3702-04 Superior Avenue, Cleveland, Ohio

A Condensing Tank Problem

(Continued from Page 25)

ing the discharge from the tank into the floor drain trap, the discharge was an indirect one—that is, over the floor

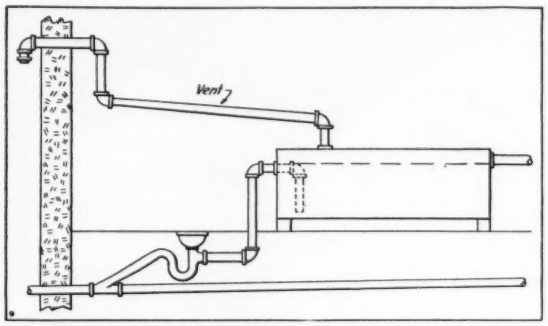


Fig. 9

drain—we would favor the connection. This is the only instance that we have noted where the vent for the condensing tank is not carried through the roof. The reason for carrying it separately through the roof is that it would be wrong to vent this tank into the regular vent system, for it would be discharging hot vapor that would work damage to the piping because of excessive expansion and contraction. Carrying this pipe through a side wall, as in Fig. 9, would be good practice, provided the pipe opens at a point where it would not be liable to do any harm.

Fig. 10 shows the method followed in Manchester, N. H. Apparently no vent is used. The inlet is shown deeply submerged, whereas it should open into the top of the tank. When correctly connected, the vapor entering through the inlet pipe will be discharged through the roof vent.

The method followed in Washington, D. C., is shown in Fig. 11. This connection is practically the same as Fig. 2, which has been criticized severely as forming a by-pass.

The discharge from this tank, instead of entering the house drain, is carried out to the house sewer. Cities vary in this respect. Probably a large majority of codes either make no statement as to where the condensing tank shall discharge, or state that the connection may be made either into the house drain or house sewer. It would seem as if it should be O. K. to discharge into the house drain if the tank is of large enough size and is correctly connected and vented. However, these provisions may not always be depended upon, and we presume those cities calling for the connection to be made into the house sewer have had experiences which seem to make this requirement necessary. It would be interesting to hear of these things.

The Holyoke, Mass., method appears in Fig. 12. Here the same danger exists as pointed out in the letter on which this article is based. The drain from the tank is not trapped, and if it should be open during the summer months, the house for that length of time would be in direct communication with the sewer.

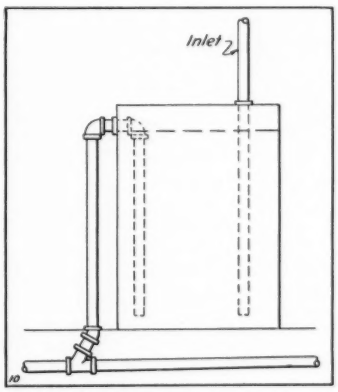


Fig. 10

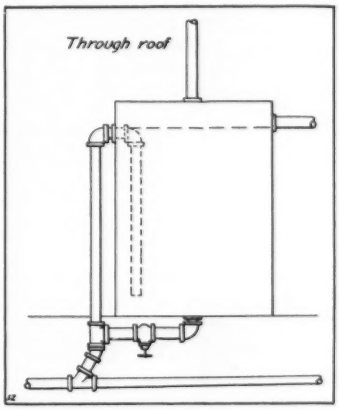


Fig. 12

All things considered, we are inclined to favor an indirect connection, as already stated, and would suggest something like Fig. 13, which it seems to us would overcome all the bad features that may arise in a direct connection. This is an interesting subject, and we shall be glad to have further contributions relating to it.

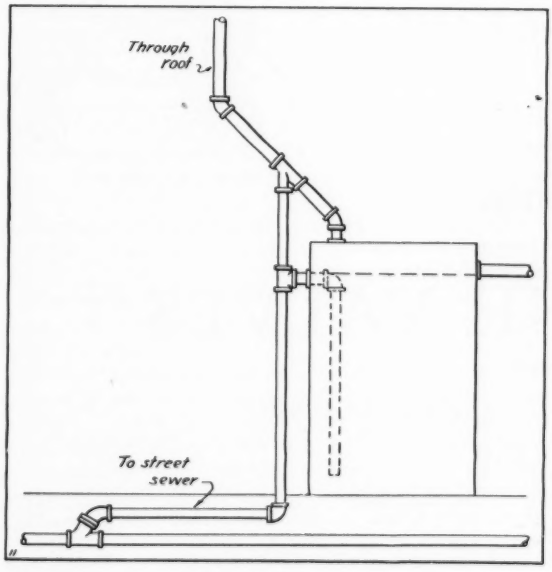


Fig. 11

John S. Jung, president of the Heating and Piping Contractors Milwaukee Association, and Oscar A. King, secretary of the organization, have just returned from a business trip to New York City. Mr. Jung attended the board meeting of the national association and Mr. King attended the secretary's conference of the Heating and Piping Contractors National Association.

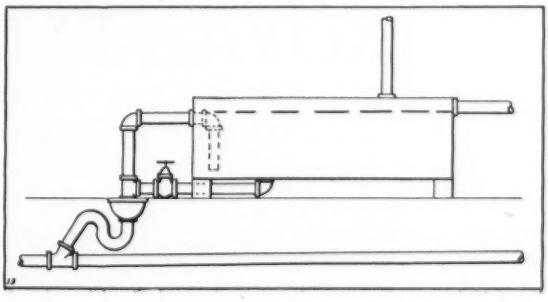


Fig. 13

ADAPTABLE

A STILLSON wrench would be of little value if made to fit only one size pipe. The all-around adaptability of a "Stillson" is what makes it the most useful tool a plumber carries.

It's much the same with Sloan Royal Flush Valves. They fit any closet bowl, urinal or slop sink . . . function as well in a five-room bungalow, as in the large hotel or office building.

ROYAL FLUSH VALVES

SLOAN VALVE COMPANY
CHICAGO

Albany, N. Y.
Atlanta, Ga.
Baltimore, Md.
Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Butte, Mont.
Cincinnati, Ohio
Cleveland, Ohio
Dallas, Tex.
Denver, Colo.
Des Moines, Iowa
Detroit, Mich.
Durham, Conn.
Fort Wayne, Ind.
Grand Rapids, Mich.
Greensboro, N. C.
Kansas City, Mo.
Los Angeles, Cal.
Memphis, Tenn.
Miami, Fla.
Milwaukee, Wis.
Indianapolis, Ind.
Minneapolis, Minn.
Nashville, Tenn.
Newark, N. J.
New Orleans, La.
New York City, N. Y.
Oklahoma City, Okla.
Philadelphia, Pa.
Pittsburgh, Pa.
Richmond, Va.
San Francisco, Cal.
Seattle, Wash.
St. Louis, Mo.
Syracuse, N. Y.
Tampa, Fla.
Washington, D. C.

MARKETS

BUSINESS REPORTS FROM LARGE JOBBING CENTERS

Pipe and Tubular Brass Prices Are Advanced

BUSINESS kept moving along at a good pace in most sections of the country during the next to the last week of September, and reports indicate that the month is going to line up favorably with the corresponding period of the past few years. In theMiddle Atlantic district business seems to have recovered quite well from the slowness that marked August, while in New York, New England and the Central West plumbing and heating materials continue to move freely from jobbers' stocks into consumption. On the Pacific Coast, according to reports, a slight lull was felt, and in Southern California many jobbers lengthened their quantity discounts. While the Northern California and Seattle, Wash., wholesalers did not change their prices, a somewhat similar change is reported to have been made in Portland, Ore.

An important development of the week was the announcement by a number of brass pipe manufacturers of an advance in their prices to jobbers of ¼ cent per pound. Also, the rumors that have been current for some time of an advance in tubular brass manufacturers' prices to wholesalers, culminated during the week with the announcement by a number of makers of a price advance that averages about 5 per cent. Manufacturers' stocks of most items are sufficiently large to insure prompt deliveries. Wholesalers in general are watching their stocks closely, taking in fresh material as needs warrant.

MIDDLE ATLANTIC

Business Points To Recovery—

Business in the Middle Atlantic market during the past 30 days seems to have recovered considerably from the s wing up of the previous month. The expansion, which in a measure embraces all lines, is rather general, although there are here and there both jobbers and manufacturers who claim that the improvement is not clearly enough defined, and any betterment that is evident cannot b depended upon with any degree of certainty. Finishing brass goods, fixtures and heating equipment have been giving a good account of themselves during the past four weeks, and now buyers are more liberal in their orders for roughing-in materials.

The construction figures for contracts awarded during August were placed at $51,066,700 by the F. W. Dodge orp. The heaviest of the various classifications was residential buildings, put at $24,622,500, while commercial, educational, hospital projects, etc., accounted for $15,-256,500. Over the same period the valuation of contemplated construction was set at close to $104,000,000.

The fall season with its usual amount of repair requirements to heating systems made itself known rather abruptly with the several cold, rainy days that were experienced during the past week. Wholesalers in keeping pace with the indicated needs of their customers rushed through a good amount of business to manufacturers. Their buying, though, ran little beyond immediate future probabilities. The price situation on practically all of the major commodities seems to be working itself out pretty well.

During the week brass pipe was advanced ¼ cent per pound by manufacturers, and the rumors of an advance in the prices of tubular brass goods that have persisted for some time finally culminated in an actuality when some makers issued new sheets which carry advances on most items. The increase varies on different items, but as a whole averages about 5 per cent. Aside from slight delays here and there in forwarding shipments, manufacturers are prompt in this department.

Soil Pipe

The soil pipe situation in the Middle Atlantic market took on a slightly better aspect in some quarters in so far as demand is involved. Master plumbers contracted more freely, with the result that jobbers' placings with foundries were somewhat broader during the seven days to which this report pertains. In no reported instance did manufacturers make any change in their price attitude. Shipping conditions generally are considered satisfactory.

Pipe—Brass, Steel and Wrought Iron

Manufacturers of brass pipe advanced their prices to the wholesale trade ¼ cent a pound about the middle of the week. Prices on steel and wrought iron remained undisturbed. Little or no change was experienced where demand from consumers is concerned. Jobbers, however, in some quarters covered their needs more liberally in the instance of brass. Steel and wrought iron pipes are moving from mills about at the same rate jobbers dispose of it to their trade. Deliveries on all three types are satisfactorily prompt.

Fittings

The buying interest in the various types of fittings is seasonally good. This is especially true of cast iron screwed, drainage and malleables. Piping contractors are fairly well engaged and the outlook for future activity is rather bright, as there are a number of substantial building undertakings about to be launched. Then, too, the boards of architects and engineers are well filled. Producers issued no sheets changing prices since the last report. Deliveries are made promptly.

Enameled Ware

The rate at which enameled ware is being called for is considered good by several interests, but there are several others serving this territory who feel that it is no better than fair. However, the business that is being completed is well divided between stock orders and direct shipments. The enameled iron business for the year has been helped considerably by the new sinks that are being produced and the colored ware. The trade as a whole is buying about as needs crop up and most factories are shipping readily. Manufacturers have made no change in prices.

Pottery

Potters are still shipping enough of their products to give business an aspect of good activity. Master plumbers, while not as busy with fixture setting as they were several weeks ago, are still drawing rather substantially on their jobbers, who in turn are calling on their production sources for deliveries. The responses are for the most part satisfactory. Prices remained unchanged by manufacturers during the week.

Plumbers' Brass Goods

The strength of the brass market relative to prices asserted itself during the week when some of the tubular manufacturers issued new sheets, which when all tubular products are taken as a group entailed an increase that averaged about 5 per cent. Buying interest in brass goods is rather well sustained and has consisted chiefly of short notice rush wants. Master plumbers are still accounting for a good quantity of both tubular and cast products and shipping delays are not reported as serious. Cast prices from manufacturers were not changed.

Range Boilers

Nothing fresh developed in the range boiler situation during the interlude since the last report was published. Jobbers are buying conservatively. Plumbing contractors are not requiring the quantities of this commodity they were last year. Factories are having no difficulty in making quick shipments. Prices from manufacturers are unchanged.

Boilers and Radiators

Most manufacturers give the impression that they are quite busy with the business that is reaching them. Some feel, though, that the improvement the requirements of the heating trade have experienced during the past few weeks has been too gradual; nevertheless practically all makers express confidence in what the near future holds in the way of business. The needs of heating contractors for repair jobs began to loom as a factor during the past seven days as the weather called attention to heating systems. Manufacturers made no change in prices. Prompt shipments are obtainable.

CENTRAL WEST

Volumes Maintain High Level—

The next to the last week in September was another good one for wholesalers of plumbing and heating supplies in this district, and the majority of them are of the opinion that the business secured next week will bring the totals for the month up to a good level. Jobbers are moving large quantities of enameled ware, brass goods and other finishing products, and at the same time report a fair demand for roughing-in materials, which, while light, helps to bolster their volumes. The greater activity among heating contractors is also making itself felt in a definite manner both jobbers and manufacturers reporting a good business in heating products.

During the week the tubular brass market was strengthened with higher prices announced by a number of manufacturers. The new sheets carry an average advance over the entire line of approximately 5 per cent. A number of producers also advanced their prices on brass pipe ¼ cent per pound. Cast brass prices were not changed. Most manufacturers are able to make prompt deliveries, although some complaints are still heard regarding the delivery service of some tubular brass manufacturers.

Building and engineering contracts let during August in the Central West amounting to $166,291,900 was the second highest August contract total on record for this district. It was 8 per cent ahead of the August, 1927, record, but there was a drop of 18 per cent from the July, 1928 total. New construction started in the Central West during the first eight months has reached a total of $1,384,057,900, which was an increase of 18 per cent over the amount started in the corresponding period of last year.

Soil Pipe

While orders for carload lots from foundries are scattered, manufacturers state that pick-ups at their local warehouses are frequent and are going a long way toward holding up current business. Manufacturers are in a position to grant early deliveries in most instances, both at foundries and Chicago warehouses. Demand on jobbers for pipe is not heavy and this is reflected at foundries. Makers announced no change in their foundry price sheets during the week.

Pipe—Steel and Wrought Iron

There is not a great deal of snap to the pipe business in this district, according to manufacturers' salesmen. Reports from some makers of steel pipe indicate that sales have picked up a little lately, with the greater consumption by heating contractors. The wrought iron pipe market changed little during the week as far as the tonnage moved into consumption is concerned, and the current rate of buying is about seasonally fair. Makers of both types of pipe offer prompt delivery service. Their prices to wholesalers have not changed. However, a number of brass pipe makers have advanced their prices to jobbers ¼ cent per pound.

Fittings

Malleable, cast iron screwed and flanged fittings showed little improvement in the past weekly period either in the buying done by contractors or in shipments into this district by manufacturers. The majority of wholesalers are still in possession of fairly good stocks, as a result of orders placed before the last price advance. Factories are able to grant early deliveries, and makers' prices to wholesalers are unchanged.

Enameled Ware

Enameled ware is moving into this district at a steady pace, according to makers' representatives. Wholesalers report a good turnover, stating that right now many contractors are rushing to finish jobs scheduled for early rental. Manufacturers possess well assorted stocks and can meet jobbers' demands without delay. Contractors find little or no difficulty in securing material from their wholesalers, and prices from manufacturers to the latter have not changed.

Pottery

Manufacturers' representatives in this district interviewed appeared only fairly well satisfied with the volume of business received during the week, but feel that there is a good amount of business ahead. Wholesalers are still

confining their buying to easily apparent needs. Potters' stocks of staples are large enough to enable them to take care of their distributors in quick time. The higher grade items and colored ware, as well as staples, are moving fairly well. Makers' prices have not been changed.

Plumbers' Brass Goods

The strong price structure that has been referred to in recent reports asserted itself during the week when a number of tubular manufacturers issued new price sheets incorporating an average advance over the entire line of about 5 per cent. Prices on cast brass items were not disturbed. Both cast and tubular salesmen say that business is going ahead at a good pace, and reports are that the advance in tubular prices stimulated buying in this line. Contractors are using quantities equally as large as last week and, as a result, distributors find frequent replacements necessary. Factory stocks of most items are good, and it is said that some improvement has been shown by those makers who have experienced difficulty in getting out orders for sink traps and plugs.

Range Boilers

Manufacturers operating in this district say that business is going along at a fairly even pace from one week to the next and, while jobbers are not placing large-sized orders, replacements for jobbers' stocks total close to an average seasonal volume. Factories are able to deliver in quick time. Prices from manufacturers to wholesalers have not been changed.

Boilers and Radiators

Heating contractors seem to be getting busier with the passing of each week and manufacturers and wholesalers in turn are finding better business, although they say that the peak of the season is some distance away. Specifications against old orders and new business are being handled promptly by manufacturers. Wholesalers also, appear to be fairly well stocked. Makers have announced no change in their prices to jobbers.

NEW YORK

Business Holds Its Own—

Activity in the plumbing and heating materials market, when looked upon from a general standpoint, is rather well sustained in the Greater New York area. This is especially true from the jobbers' angle, but some manufacturing sources seem to feel that the attitude of buyers leaves at least a little something to be expected. Finishing products are still in many quarters rushing ahead into consumption and it is found that the slower rate at which roughing-in materials are moving gives the market a retarded tinge. In few commodities are wholesalers well enough stocked to withstand any concerted demand on the part of their trade. This necessarily means that the needs of contractors almost immediately are reflected to manufacturers by jobbers. Optimism is still predominant as regards fall business even in those of the major lines that are now showing less activity than was earlier expected of them.

Manufacturers are still maintaining production at a point that is commensurate with demand and are thus continuing shipping schedules on a satisfactory basis. The price situation, which seems to be giving about as good an account of itself as could be expected, was given added strength during the week, when brass pipe, reacting to the advance of raw materials, was given an increase of ¼ cent a pound. Tubular brass goods prices were also advanced by some makers approximately 5 per cent when the changes effected in the various items were averaged.

Soil Pipe

Little current buying is being done by wholesalers and demand from contractors did not look up to any extent; in fact, all conditions surrounding soil pipe remain about as they were a week ago. Jobbers' stocks are rather well assorted, but few have broad reserves. Foundries are delivering promptly and sheet quotations to jobbers remain as they have been for some weeks past.

Pipe—Brass, Steel and Wrought Iron

The outstanding change in the brass pipe market since the last report was written centers around the price advance of ¼ cent a pound effected by most manufacturers. At this writing, demand has not had a chance to react fully, but sellers look for broader activity. Steel pipe business is a little below what the average of the past few years would indicate as normal. Interest in wrought iron is spotty, as one jobber will buy rather freely while others who bought some weeks earlier remain out of the market. Any real activity on the part of contractors would necessitate jobbers calling on mills for pipe to satisfy their requirements. Makers are supplying readily. Prices on steel and wrought iron pipe from manufacturers remain unchanged.

Fittings

Trading in fittings today in a large measure is similar to the activity that has obtained in past years at this time and the new business secured by distributors is not particularly heavy. For the most part, jobbers seem content to maintain their bins at a point slightly beyond where they can readily meet the needs of their trade. Manufacturers are filling orders promptly. Most firms interested in the production of brass types seem to be watching the rising metal market closely. No price changes have been effected by manufacturers.

Enameled Ware

Where a majority of the producers of enameled ware are concerned the volume of business executed in this territory so far this year has reached beyond that of the same period of 1927, but when the current rate of buying is discussed reports vary, as some contend that business is holding up well, while others see a marked falling off in interest. Master plumbers are still installing large quantities of fixtures and their jobbers are keeping them well satisfied with deliveries. At the same time makers are shipping promptly. Manufacturers have made no change in prices.

Pottery

Fresh business from the Greater New York territory is a little slow in comparison with the rate of buying that obtained earlier in the year. Potters, however, are still shipping actively where old business booked earlier for specific jobs is involved. The fall season, though, is expected to furnish some good business, as there are a considerable number of projects started on which fixture placings are still to be made. Makers are delivering promptly on most items. Jobbers have received no indication of actual change in prices from manufacturers.

Plumbers' Brass Goods

Most makers of brass goods give business a good position. This activity consists mostly of immediate delivery ordering. Some buyers for jobbing establishments are anticipating their future needs for October and November, but this business is rather limited when a comparison is drawn between it and the total which the small immediate delivery purchases entail. The rumors of an advance in brass goods prices were substantiated during the week

The Metal Market

	Sept. 25	Aug., 1928	June, 1928	1927
PIG IRON—				
No. 2 foundry, Chicago, Furnace	$18.50	$17.60	$18.00	$19.66
PLATES AND SHEETS—				
Steel boiler plates, Pittsburgh, per lb.	1.90c	1.85c	1.85c	1.83c
Blue annealed sheets, No. 10, Pittsburgh, per lb.	2.00c	2.00c	2.00c	2.20c
Black sheets, No. 24, Pittsburgh, per lb.	2.65c	2.65c	2.70c	2.91c
TIN—				
Straits tin	49½c			
LEAD—				
Chicago	6.20c			

The Old Metal Market
Dealers' Buying Prices

	Per lb.		Per lb.
Aluminum clippings	18 c	Copper, light	10¼c
Block tin	44½c	Copper, uncrucibled wire	12 c
Brass, light	7 c	Faucets and valves	9¼c
Brass, heavy mixed	7⅜c	Lead, heavy	5.50c
Brass, red	10 c	Solder joints	9 c
Copper, crucible	12¼c		

NOTE: Prices are those quoted on Tuesday of this week.

when some manufacturers issued new sheets which carried an increase of approximately 5 per cent.

Range Boilers

Demand on the jobbers of this section for range boilers is not at the present time in any way substantial. Jobbers, as a rule, are buying about as the trade, through its purchases, pull down their stocks, so that consumption is rather clearly reflected to manufacturers.

Boilers and Radiators

The upward trend of business in the heating materials market continues and the sales of many manufacturers were boosted greatly by the interest which was manifested in repair parts. Heating contractors have begun to engage on their fall work and the overhauling of heating plants lent some impetus to business.

NEW ENGLAND

Most Materials Are Moving Freely—

With the month of September fairly well rounded out, conditions pertaining to the plumbing and heating business seem more stabilized and of a healthier nature, especially in so far as profits are concerned, than during any period of the year. Activities in the development of new construction have been considerably lengthened, and, while competition among contractors continues brisk, the added demand grants better distribution of work and is gradually uplifting the profit margin of ordinary everyday jobs to better levels. Wholesalers' volumes have been moved upward during the past few weeks by the livened interest displayed in most all materials by the plumbing and heating trade. The seasonal demand for finishing materials such as enameled ware, pottery and brass commodities is better exemplified with each succeeding week and is quite comparable with the need of this class of material which obtained during September of last year.

In so far as consumption requirements of finishing materials are steadily improving, makers are naturally effecting steady shipments. Good consignments of heating equipment to this territory were also noted by a number of boiler and radiator producers during the week. As has been the custom throughout most of the year, wholesalers continue to buy for near-at-hand wants and are keeping their inventories closely aligned with current demands of their customers. Manufacturers, in the majority of cases, are able to make shipments on dates requested. Brass pipe was advanced ¼ of a cent per pound by a number of makers and jobbers. Also, several tubular brass producers advanced their prices to wholesalers approximately 5 per cent, taking the line as a whole.

Soil Pipe

Reports of satisfactory sales emanate from offices of

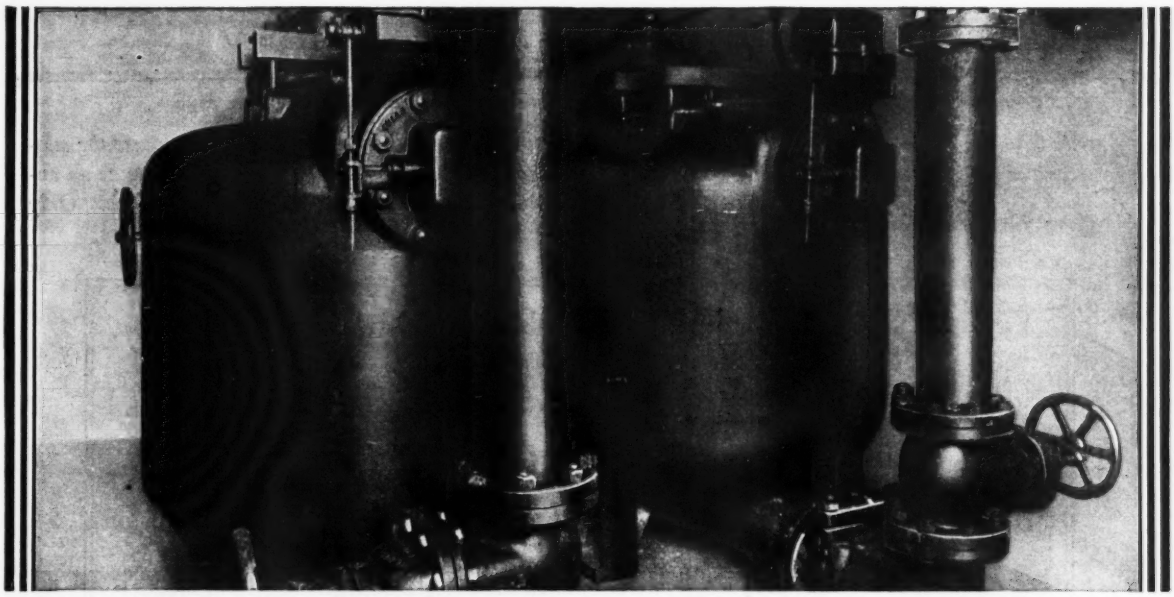
(Continued on Page 77)

The Stock Market

Par Value	1928 High	Low	Range for Week Ending September 22, 1928 *		High	Low	Close
NP	81⅜	59	Air Reduction Sales Co	A	80⅜	77⅛	77⅞
25	161½	130⅛	American Radiator Co., com	A	160	154	155¾
100	152	142	American Radiator Co., pfd	A	145¾	145	145
25	114	82⅛	American Rolling Mills Co	B	99¼	97⅛	98
50	82⅜	57¾	Anaconda Copper Mining Co	A	82⅜	79⅛	81¾
NP	69⅞	51⅞	Bethlehem Steel Co., com	A	67⅞	64	65⅛
100	125	116¾	Bethlehem Steel Co., pfd	A	120¼	118	118
NP	62⅜	27½	Brunswick-Balke-Collender Co	A	62⅜	54⅜	59
NP	121⅝	90½	A. M. Byers Co., com	A & F	121⅝	108⅛	116⅞
100	115¼	108½	A. M. Byers Co., pfd	A & F	111¼	111¼	111¼
100	140	128	Century Electric Co., com	G	130	130	130
100	106	101	Century Electric Co., pfd	G	103	103	103
50	6	3	Chicago Nipple Mfg. Co., "A"	B	5	4½	4½
50	3	1¼	Chicago Nipple Mfg. Co., "B"	B	1⅜	1¼	1¼
25	50	45	Crane Company, com	C	50	49	49½
100	122	118¾	Crane Company, pfd	C	121⅜	121	121⅜
100	94	67	Detroit Brass & Malleable Works	D	70	70	70
100	110	91	The John Douglas Co., pfd	I	98	98	98
20	23	17	Eagle-Picher Lead Co	I	17½	18	17½
NP	54	32½	Fairbanks, Morse & Co., com	A	43	41¾	42¾
100	114¾	104	Fairbanks, Morse & Co., pfd	A	110	109¼	110
NP	44⅞	27½	Fulton Sylphon Co	B	42	40½	40½
NP	12½	8½	Greenfield Tap & Die Corp	B	11½	10½	11¾
NP	152¼	96¼	Johns-Manville Corp	A	152¼	145	146
100	160	150	Jones & Laughlin, com	A & F	154	154	154
100	124¼	119⅛	Jones & Laughlin, pfd	A & F	120½	120	120⅛
NP	44	30	Minneapolis-Honeywell Reg. Co., com	C	38	37⅞	38
100	106	98	Minneapolis-Honeywell Reg. Co., pfd	C	104	102½	102½
NP	56	31½	Modine Mfg. Co., com	C	55	50	50
NP	42	32	F. E. Myers & Bro. Co., com	H	39	38⅝	38¾
100	105⅜	104½	F. E. Myers & Bro. Co., pfd	H	104½	104½	104½
100	136	115	National Lead Co., com	A	130½	127	128¼
100	147¼	139	National Lead Co., pfd., "A"	A	143	142½	143
100	121½	112½	National Lead Co., pfd., "B"	A	120½	120½	120½
NP	40⅜	14	National Radiator Corp	A	18⅞	17½	18½
NP	98½	60	National Radiator Corp., pfd	A	68	68	68
NP	25	19½	Neptune Meter Co., "A"	B	20	20	20
100	109	104	Ohio Brass Co., pfd	H	105½	105½	105½
NP	100	88¾	Ohio Brass Co., "B"	B & H	90½	89½	89½
100	101	100	Penberthy Injector Co., pfd	D	101½	101½	101½
NP	27	17	Richmond Radiator Co., com	B	18¼	17	17
NP	40⅞	36	Richmond Radiator Co., pfd	B	38	37½	37½
NP	42⅞	26	Spang, Chalfant & Co., com	A	42⅞	38¾	39¾
100	100	98½	Spang, Chalfant & Co., pfd	A	98½	98½	98½
NP	42¼	34	Standard San. Mfg. Co., com	A & F	36½	36	36
100	126¾	126¾	Standard San. Mfg. Co., pfd	A & F	126¾	126¾	126¾
100	300	190⅜	U. S. Cast Iron P. & F. Co., com	A	280	250	270½
100	137	115	U. S. Cast Iron P. & F. Co., pfd	A	123½	123½	123½
NP	48	38½	U. S. Radiator Corp., com	B & D	43	43	43
100	106	100	U. S. Radiator Corp., pfd	D	100	102	101½
100	63¼	27	U. S. Rubber Co., com	A	42¼	36⅜	37
100	109⅜	55	U. S. Rubber Co., pfd	A	71¾	64½	67
100	165⅜	132⅜	U. S. Steel Corp., com	A	160⅜	155¼	157¾
100	147¼	138⅜	U. S. Steel Corp., pfd	A	142¾	141½	131½
NP	26⅞	14½	Walworth Company	A	26⅞	20½	23¾
NP	47½	32	Wayne Co., com	C	47½	42	47¼
NP	52	45¾	Wayne Co., pfd	C	50	48¼	49½
100	72	72	Wheeling Steel Corp., com	B	72	72	72
100	126½	125	Wheeling Steel Corp., pfd., "A"	B	126½	126½	126½
100	135½	135½	Wheeling Steel Corp., pfd., "B"	B	135½	135½	135½
NP	10	6½	Williams Oil-O-Matic Htg. Corp	C	8	7¾	8
NP	106⅞	83½	Youngstown Sheet & Tube Co	A	92⅞	92¾	93½

*Where listed—

A—New York Stock Exchange
B—New York Curb Exchange
C—Chicago Stock Exchange
D—Detroit Stock Exchange
E—Boston Stock Exchange
F—Pittsburgh Stock Exchange
G—St. Louis Stock Exchange
H—Cleveland Stock Exchange
I—Cincinnati Stock Exchange
U—Unlisted Stocks



Sewage Ejectors of large capacity as used by office buildings, apartments, hotels or hospitals. Sizes from 30 to 1500 gal. per min.

Where toilets are below street sewer
... *put in this sewage ejector*

WHEREVER toilets are located in basements below the level of the street sewer, it is good practice to put in a Jennings Sewage Ejector.

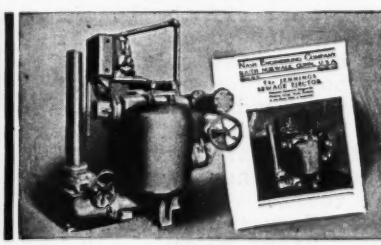
Soil, sewage and drainage flow into the ejector pot by gravity. Here such waste matter accumulates until the pot is full; whereupon the sewage is discharged by means of compressed air into the street sewer overhead.

Operation is automatic. Also reliable. There are no inaccessible or complicated parts likely to get out of order or need attention. No screens to clean. No storage basins.

Use the coupon in writing for full particulars.

Jennings Pumps

THE NASH ENGINEERING CO 41 WILSON ROAD, SOUTH NORWALK CONN.



MAIL THIS COUPON ~ TODAY

NASH ENGINEERING CO.,
41 Wilson Road, South Norwalk, Conn.
( ) Send catalogue describing Jennings Sewage Ejector.
( ) Send full particulars for automatically raising ..... gal. per min. sewage and drainage against ..... ft. head.
NAME ..... ADDRESS .....

RETAIL ADVERTISING SERVICE

$4.20 for twelve weeks' service. We send new cut each week. You take copy from this page.

We've made a little change this week—giving copy for one newspaper ad instead of two, because the subject requires a little more space. Note that this ad may very well be used as copy for a blotter, or as an envelope stuffer. If you are not using this Retail Advertising Service, start now. Only $4.20 *for twelve weeks—we send a new cut each week and a reprint of this page.*

Series No. 33

Yes, even such humble things as plumbing and heating equipment help hold the family together

WE MEAN, of course, holding it together in spirit, so that it seems natural to the children that *your* home is the center of their social activities rather than some other home—that, even when they have set up their own homes, *your* home remains a bright memory, and a happy haven for their children. It's the little bickerings of family life that destroy that spirit—someone pounding on the only bathroom door in anger . . . quarrels as to who is responsible for a cranky heating plant. Remodel! Modernize! Give your family sufficient bathroom facilities and controlled heat. Make the appointments of the home as attractive as those elsewhere. Let us show you what these fundamental changes can mean.

(Your Name, Address and Telephone Number Here)

CLIP this item and hand it to your newspaper to be run the same day as the advertisement above — get into the news columns, too.

PETTY QUARRELS WRECK FAMILIES

It isn't, says Harry Brown, local plumbing and heating contractor, the big things that disturb family relationships.

"It's the petty bickerings," he maintains. "Watch people—sisters and brothers—flare up over trifles. Petty quarrels over a long period of time erode family affection and destroy the family spirit. If you want to feel like Cain, wait outside the one bathroom door while your brother takes his time over his shave and bath in the morning—meanwhile refusing to worry about an old-fashioned heating plant, leaving that worry to you."

Modern, convenient homes, says Mr. Brown, would do much to preserve the family affection which can mean so much in the lives of human beings.

AT RIGHT you have copy for a sales letter —we recommend getting it out to your whole prospect list.

HARRY BROWN
PLUMBING & HEATING

Two Rivers, N. Y.,
Sept. 29, 1928.

Mrs. Edward Jones,
Two Rivers, N. Y.

Dear Madam:

I know you will agree with me when I say there is no more necessary background for a successful and happy life than a happy home life—genuine affection between the members of a family.

What disturbs that affection? The tragedy of the usual brother-and-sister indifference seems to me to lie in the pettiness of the quarrels which, over a long period of time, completely destroy normal affection between them.

To hold the family together these days is a great task—with all that is attractive outside the home. But if the home is a happy one, then it will be the center of social life. If some of the causes of family quarrels are removed, the problem is simplified.

If the one bathroom, over which there is a daily morning quarrel, is supplemented by another. If the heating plant which is old-fashioned and inefficient is replaced by a modern plant, so that there can be no charges of neglect —we believe that two fundamental changes will have been made.

We'd like to talk further with you. The changes can be made inexpensively, and on convenient terms.

Very truly yours,
HARRY BROWN.

Now · · · Unit Heating · · · *free from trouble and repair costs*

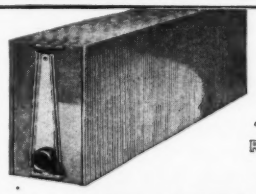
For the economical distribution of heat in
Factories
Railroad Shops
Roundhouses
Warehouses
Mills
Garages
Gymnasiums
and all industrial buildings, as well as in special process rooms where uniform heat maintenance is required.

The Herman Nelson hiJet Heater ends repair expenses and costly waste of heat—items that add so heavily to the overhead in all industrial buildings. It is built to stand the hardest wear and tear. It is leak-proof and trouble-proof.

The hiJet forces a jet of warmed air downward with sufficient velocity to dispel the cold air strata at the floor line, resulting in a uniform and comfortable temperature. This principle is new, sound and practical in plant heating.

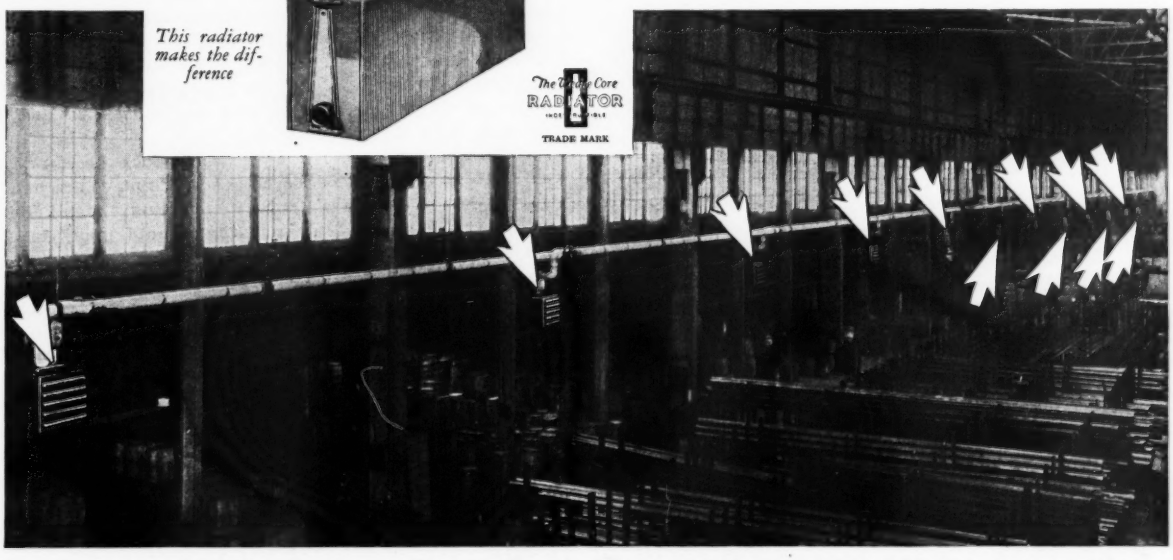
The HER-NEL-CO Indestructible Radiator used in the hiJet is guaranteed to withstand steam working pressures up to 150 lbs. It has no joints—there is no weakness—no leaks. Its construction provides free steam circulation or condensation drainage.

The hiJet offers exceptional opportunities to Heating and Ventilating Engineers and Contractors. Its sound reputation has been built up by leaders in industry, winning hearty endorsement from Plant and Business Executives. Learn more about the hiJet. Fill in and return the coupon below, and get the latest catalog giving complete information.



This radiator makes the difference

The Unit Core RADIATOR TRADE MARK



Jones & Laughlin Steel Corporation—Chicago

Manufactured only by THE HERMAN NELSON CORPORATION, *Moline, Ill.*
Builders of Successful Heating and Ventilating Equipment for Over 20 Years

Sales and Service

BELFAST, ME.	SAGINAW	GREEN BAY	DENVER
BOSTON	DETROIT	MINNEAPOLIS	SALT LAKE CITY
NEW YORK CITY	CLEVELAND	ST. LOUIS	SPOKANE
UTICA	COLUMBUS	BIRMINGHAM	PORTLAND
BUFFALO	CINCINNATI	ATLANTA	SAN FRANCISCO
PHILADELPHIA	TOLEDO	MEMPHIS	SEATTLE
SCRANTON	INDIANAPOLIS	EMPORIA	VANCOUVER
PITTSBURGH	CHICAGO	DALLAS	TORONTO
CHARLOTTE, N. C.	DES MOINES	KANSAS CITY	WINNIPEG, MAN.
GRAND RAPIDS	MILWAUKEE	OMAHA	CALGARY, ALTA.

The HERMAN NELSON hiJet TRADE MARK HEATER

GET FREE BOOK

THE HERMAN NELSON CORPORATION
Moline, Illinois

Gentlemen:
Please send me book No. 11 containing the facts about the Herman Nelson hiJet Heater.

Name..... *Firm Name*.....

Address..... *Type of Building*.....

The Pipe Cutter with *lifelong* friends

The Genuine Barnes

USERS of *Genuine* Barnes Three-wheel Pipe Cutters are all lifelong friends. Why?

Because best materials, most experienced workmanship, 51 years of concentrated effort—have gone into making this the *best pipe cutter on the market.*

A tool that holds such a place must be quick, cut true, efficient, economical, long-lasting. Try out *Genuine* Barnes for these qualifications.

You'll find this red tag on every Genuine Barnes.

YOU can get the *Genuine* Barnes from your supply dealer. Insist on the *Genuine* Barnes made by the Barnes Tool Co. Comes in 8 sizes, to cut all pipes from *1-8* inch to 12 inches.

New Catalogue

Send for a copy of our new illustrated catalogue, describing sizes and parts, with list prices.

The **Barnes Tool Company,** Inc.
Creators of the Genuine Three-Wheel Barnes
New Haven Conn.

Letters to the Editor

DR. ARNOLD H. KEGEL ON THE PUBLICITY OF THE PROBLEM OF CROSS CONNECTIONS IN HOSPITALS

Editor, "Domestic Engineering":—

I wish to thank you for commenting upon the attention given at the Milwaukee meeting of the American Society of Sanitary Engineering to the matter of hospital cross-connections, presented by Thos. J. Claffy and Joel I. Connolly of this department.

It is very gratifying to note that this presentation was favorably received, and I wish to take this opportunity of expressing my appreciation for the admirable co-operation your publication has given in helping bring the cross-connection situation before the plumbing trade.

Your plan to send copies of Mr. Connolly's address to boards of health and to plumbing inspectors throughout the country will unquestionably help to bring the important matter to the attention of those in a position to make use of the information.

Respectfully,
(Signed) Arnold H. Kegel,
Commissioner of Health, City of Chicago.

RESEARCH TESTS SHOULD BE OF VALUE TO PLUMBING TRADE

Editor "Domestic Engineering":

Referring to the article, "Tests on the Hydraulics and Pneumatics of House Plumbing," published in the September 8 issue of "Domestic Engineering," we believe that these tests conducted at the University of Illinois and the information they develop should be of value to the trade, especially if the data compiled can assist the trade in having local plumbing ordinances revised to conform with this information.

This would reduce the amount of stock necessary to carry to meet the demands of the different codes, and it should be of some assistance in enabling the plumbing trade to get a standard code that would apply in the majority of cases.

(Signed) Chandler Pump Company,
Cedar Rapids, Iowa. Leon C. Fitch.

WEST COAST MASTER PLUMBERS GO IN FOR GROUP ADVERTISING

For the dual purpose of stimulating sales and educating the public in matters pertaining to proper sanitation and adequate heating, the West Coast branch of the Plumbing and Heating Industries Bureau is sponsoring group advertising among the members of the industry, with the ultimate aim of starting such campaigns in every metropolitan area bordering on the Pacific.

Bureau representatives are interesting as many firms as possible in the plumbing and heating field in each large city. This group will run an advertisement in a daily paper each day, taking some current need to form the meat of the advertising story each week, with fresh copy every day. The name of each member will appear in rotation. A news story will be tied in each time.

In San Francisco, for instance, the group has been organized, a high grade advertising writer has been retained, and all arrangements made. The cost to each member, as his turn comes around, will be $22.36.

The chief advantage in this form of publicity lies in the fact that an advertisement and story appearing every day, hammering on the same subject, will have a cumulative effect impossible to secure otherwise without the expenditure of huge appropriations for advertising.

THIS WEEK

AMONG MANUFACTURERS, WHOLESALERS AND SALESMEN

AMERICAN RADIATOR CO. MAKES CHANGES IN PERSONNEL

A large number of changes in the management of branches of the American Radiator Co., recently made, are announced at the home offices of the company in New York City. Among the changes are the following:

Charles A. Pangborn, formerly manager of the Portland, Ore., sales office, has been appointed manager of the Omaha branch, and R. E. Daly, former manager of the Omaha branch, has been made manager of the St. Louis, Mo., branch. John J. Ney, formerly St. Louis manager, becomes manager of the New England branch, with headquarters in Boston. John H. Roberts, formerly connected with the American Radiator Co., but of recent years with the Pacific Gasteam Co., San Francisco, Calif., has been appointed Indianapolis, Ind., branch manager. All of the above changes have been consummated. In addition, Roy N. Downs, who was manager of the Indianapolis branch, will take over a similar position in Baltimore, Md., on October 1, and M. S. Dillman, who has been managing the Baltimore branch, will assume charge of the Philadelphia branch on that date.

CONCRETE LAUNDRY TRAY MEN HOLD MEETING

The Concrete Laundry Tray Institute held a meeting at the Congress Hotel, Chicago, on Tuesday, September 18. The meeting was given over to discussions on laundry tray developments and improvements.

Among those in attendance at the meeting were: R. S. Grogan of the Chicago Granitine Mfg. Co., Chicago; Dick Collings of the Kastone Co., Cleveland; John Harper of the Chas. Wesely Co., Chicago; Frank Steiner of the Standard-Elsmere Granite Co., Chicago; E. Warndorff of the Concrete Fixtures Co., Chicago.

MOVE CHICAGO OFFICES DOWNTOWN

The Chicago offices of the United States Radiator Corp., Detroit, Mich., moved recently from 3254 North Kilbourne avenue, to a downtown location at Room 1020 State Bank building, La Salle and Monroe streets.

MOVE PHILADELPHIA OFFICES

The Philadelphia, Pa., offices of the Stockham Pipe & Fittings Co. have been removed to 1813 Fidelity-Philadelphia Trust building. These offices are in a newly constructed building and afford the concern increased facilities. A. W. Hale, who is in charge of the company's interests in the Philadelphia territory, has added Frank Martin, formerly with Ford & Kendig, to his personnel.

OWNERS SELL ACME SANITARY POTTERY CO.'S PLANT

The plant of the Acme Sanitary Pottery Co. on May street, Trenton, N. J., has just been sold to the Essex Rubber Company in that city, by the owners, who were also the officers of the company. The officers were James A. Dorety, president, John P. Dorety, vice president, and James A. Dorety, Jr., secretary and treasurer.

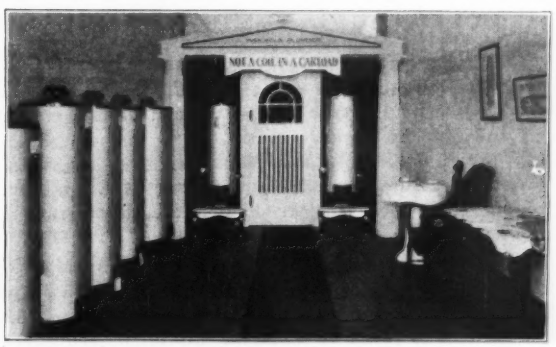
MOVES INTO NEW BUILDING

The Decatur Pump Co., Decatur, Ill., moved recently into its own new building at 2750 Nelson Park road, that city. The building is 190x250 feet, and is of the latest type of industrial construction. The property on which it is located comprises ten acres of ground, allowing plenty of room for future expansion.

W. A. Shorb is president of the company, A. W. Burks, vice president; W. L. Woddell, secretary-treasurer, and B. F. Templeton is general sales manager.

TO BUILD LARGE ADDITION TO PLANT

Plans are now being made by R. W. M. Kent, industrial engineer, of Philadelphia, Pa., that call for the doubling of the present plant of the Fitzgibbons Boiler Co., Oswego,



New display room of the EverHot Heater Co., at Louisville, Ky.

N. Y., according to Homer Addams, of Philadelphia, president of the company. The new foundry, which is about completed, will be placed in operation within a short time.

MOVES HEADQUARTERS TO DETROIT

The Best Mfg. Co., formerly of Cleveland, Ohio, moved recently to the Best building, 1306-8 Holden avenue, Detroit, Mich. The move affects the headquarters and warehouse of the manufacturers.

NEW YORK JOBBERS PLAN BIG DANCE

The fourth annual dinner and dance of the Jobbers' Credit Association, Inc., New York City, is to be held at the Hotel Commodore on Saturday evening, November 10, beginning at 7:30, it is announced. The affair, one of the biggest in the trade in the East, is expected to be larger than ever this year, with several new novelties. The entertainment this year will consist of two shows, one during the dinner hour and one at midnight, and the same orchestra that has performed at past affairs has been engaged.

J. H. Ritchie of Crane Co. is chairman of the committee in charge, and is assisted by S. C. Breihof, Dimock & Fink Co.; Edward Schwartz, E. Schwartz Plumbing Supply Co., Mortimer Smolka, E. Smolka Plumbing Supply Co.; J. A.

Hurley, Pierce, Butler & Pierce Mfg. Corp.; Israel Zicherman, Kamerman & Co., Inc.; J. Weil, Weil Bros.; Arthur Kramer of Ben Kramer; C. W. Mitchell of W. H. Hussey & Son, and Ralph Kaplan, Tremont Plumbers Supplies. Officers of the association consist of Milton M. Goldsmith, president; John A. Hurley, vice president; Robert Bollman, second vice president; S. C. Breihof, third vice president; Edward Schwartz, treasurer, and Glenn B. Van Buren, secretary.

MOVE BROOKLYN WAREHOUSE TO FOREST HILLS

The Central Foundry Co., New York City, is moving its Brooklyn warehouse to Metropolitan avenue and Woodhaven boulevard, Forest Hills. John Kitchen is manager of the branch and F. M. Ritter is assistant manager.

PRINCIPLES OF CHARACTER ANALYSIS EXPLAINED TO SAN FRANCISCO SALESMEN

How practical character analysis can be applied to salesmanship was made plain to the San Francisco chapter, Plumbing and Heating Salesmen at their September meeting at the Clift Hotel. John H. Coupin of the Western Pacific Railroad was the speaker of the day. Mr. Coupin has made a deep study of practical character reading, the principles of which he applies successfully in selling transportation—both passenger and freight.

"Men, in general," said the speaker, "can be divided into five groups, according to physical characteristics." In group 1, he places the fleshy men, to whom the sales-talk should appeal to his sense of comfort, at the same time dwelling on the ease of operation of certain equipment and how little effort is required to make it function. "Don't bother this man with details, either statistical or mechanical; and if you try to entertain him, take him to a good musical show where there are lots of pretty girls."

In group 2, Mr. Coupin placed the thin skinned, red-faced man, designating him as nervous, active, a lover of the limelight and all that is exciting or thrilling. "This type of man is given to changing his mind frequently. When you sell him, get his name on the dotted line promptly. If he's buying bathroom fixtures, interest him in bright colored ware—the brighter the better—something that appeals to his sense of showiness."

Group 3 constitutes the type of man in which muscular development predominates. "The keynote of this group is action; they are frugal, and while they are not penny pinchers, they are anxious to save money. When you sell them, point out the utility of your goods, how strong and durable they are and how well they will function. In contradistinction to the first type, those who fall in this group will not in the least object to carrying wood and coal, for instance, if you are interesting him in heating equipment. However, this man won't concern himself with his own comfort as he will that of his family. Don't argue with him whatever you do; reason with him, instead."

The bony type, in which the skeleton structure predominates, makes up group 4. This class, it was pointed out, is constant to the point of obstinacy. "If you're introducing a new line of fixtures to this man, you're going to have hard sledding. It's a tough job to make him alter his opinion. You must figure carefully with him; and you can't appeal to his vanity nor sense of comfort. You must make him 'sell' himself, and when you have his confidence you're his friend forever."

Mr. Coupin placed the mental type, or thinker, in group 5. This represents the highest form of nerve development in the animal world. The extreme of this type is a short person with a small body, his growth having gone largely to the skull structure. He likes to dwell on the abstract, and enjoys talking about philosophy, religion, economics and allied subjects. When doing business with him you must deal with logic and figures. This type, it was pointed out, is more deeply interested in the theory of an idea than in its practical application.

APPOINT NEW EXECUTIVE OF OIL BURNER ORGANIZATIONS

Trell W. Yocum

Trell W. Yocum, newly elected managing director of the Oil Heating Institute and the American Oil Burner Association, was to take up his duties on October 1. Leod D. Becker, who has been at the head of the two related organizations since their establishment six years ago, retires from the office so he may devote all his time to his publishing business. Mr Becker's feeling is that "The present work and future growth of the American Oil Burner Association and its affiliated organization, the Oil Heating Institute, require the undivided attention of the executive in charge. In Mr. Yocum, the directors have chosen a man ideally fitted for the increasing responsibilities of the position. He is a seasoned association executive. He will bring to the oil burner industry a thorough familiarity with the oil business, and his wide acquaintance with the leaders of the oil industry will be of material benefit to both the oil and oil burner industries. His selection emphasizes the growing importance of oil heating and the readiness for co-operation on the part of the oil industry which was shown last December by the endorsement of oil heating on the part of the directors of the American Petroleum Institute."

Mr. Becker continues as a member of the boards of the Oil Heating Institute and the American Oil Burner Association.

Mr. Yocum was born in Mechanicsburg, Ohio, in 1893, and graduated from Ohio State University in 1914. After leaving college he engaged in newspaper and magazine work in Cleveland. When the United States entered the war, he joined the first Officers' Training Camp at Fort Benjamin Harrison, but shortly after was incapacitated for military service by temporary physical disability following a major operation. From 1917 to 1919 he was a member of the staff of Herbert Hoover. From 1919 to 1924 he was with the Crowell Publishing Company, first as managing editor of "Farm and Fireside," and later as managing editor of "Collier's."

In 1924 he became secretary, and later director, of the Committee on Public Relations of the American Petroleum Institute, the position from which he resigned to take up his new work.

CHARLES J. PECK CALLED BY DEATH

Charles J. Peck, manager at Detroit for Crane Co., Chicago, and president of the Detroit Engineering Society, died in Detroit, September 9, following an operation for appendicitis. He was also a member of the Michigan Engineering Society.

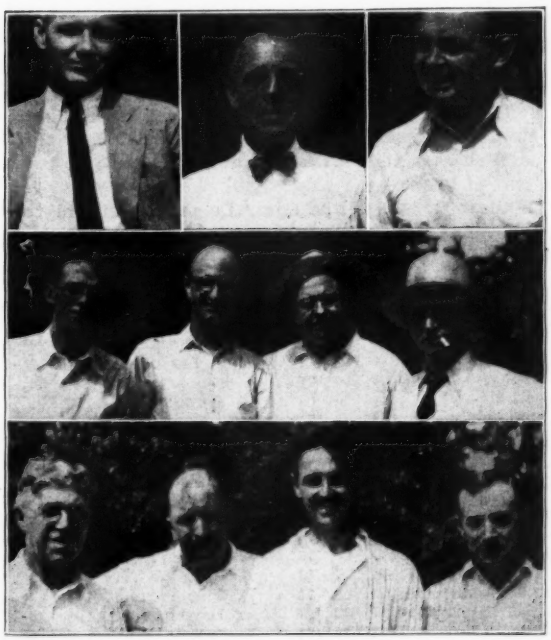
EASTERN TRADE GOLF ASSOCIATION HOLDS FINAL MEET OF SEASON

Although rain dampened the spirits and thoroughly wetted the clothes of the two score members of the Eastern Trade Golf Association who turned out for the final meet of the season, held at Essex Fells Country Club, Essex Fells, N. J., on Thursday, September 13, the scores did not suffer as much as many would imagine. The course is a beautiful one, and Robert W. Pryor, Jr., who was host, was warmly congratulated.

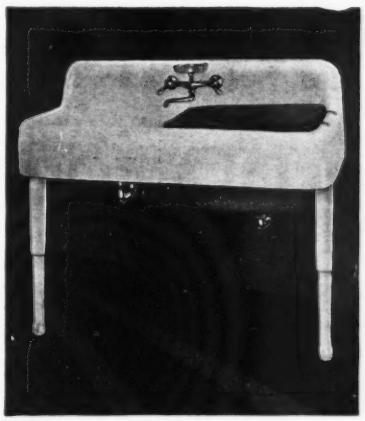
The prizes were well divided, 21 being passed out. The morning contest was as usual an 18 hole best ball foursome, J. Barnum and D. Haire leading in Class B, and Ray Bookhout and R. E. Peck leading the A division. Each of the four was given a bridge set by the association. In the afternoon, the winners in Class A were Leo O'Neil, who took a porch set given by A. Dovel, W. M. Cosgrove, who earned bookends given by W. H. Murphy, C. S. Wood, who selected an onyx pen set awarded by Thomas Kellogg, G. M. Scott, whose prize was a candy jar, selected by M. A. Cordner, J. K. Law, who took a traveling set that Mr. O'Neil had bought, F. A. Murray, whose pick was a thermos bottle bought by W. A. Davis, J. B. Garfield, who decided upon an order for merchandise given by E. F. Conroy, and S. C. Carrier, who now has a cheese and cracker set the association gave.

In Class B, J. C. McDonald led, taking a porch set, the gift of Jenkins Bros., W. H. Oleson earned a carving set, donated by the association, Thomas Dougherty a traveling clock given by Harold Townsend, J. Ewald an onyx pen set donated by Mr. Pryor, who squared matters by getting a beverage set that Herman Jackes had purchased, Thomas Kellogg, who took candlesticks, the gift of Mr. Wood, E. G. Williams, whose prize was a dozen balls in a cedar lined cigarette box, these being given by A. S. Armagnac, and W. H. Carrier, whose scores gave him a sandwich plate picked out by the association.

The final contest between the 16 players who had



Top row: Ambrose Walsh of Harrison, N. J.; W. A. Keplinger and J. K. Law. Middle row: B. F. Chapin, M. A. Cordner, R. W. Pryor, Jr., W. S. Kolthan. Bottom row: Charles S. Wood, W. M. Cosgrove, Paul Cooney and A. Engle



"Modernize with Rundle Ware"

A Selling Idea to Keep Up Winter Profits

You can make money this winter by going after the home modernization business in your community. Rundle ware will help you. It comes to the front in every comparison. Modern designs; smooth, beautiful surfaces. Practical from every standpoint.

Point out the many attractive Rundle features to your customers. Start now to talk "Home Modernization with Rundle Ware." Write for catalog.

RUNDLE MFG. CO.
Milwaukee, Wis.

RUNDLE

PLUMBERS' SANITARY ENAMELED WARE

BRASS AND IRON GOODS

The Mark that Has Won the Confidence of Buyers

KEWANEE RADIATORS

KEWANEE BOILER CORPORATION
Kewanee Illinois

Hotstream Gas-Pressure Heaters are ideal for use in country and suburban homes where city gas is not available. They are rapid and efficient, and offer the Plumber a vast new field for profitable business.

Hotstream Double Copper Coil Heaters are used, with the Coleman Patented Gasoline Burner.

Write for complete information.

THE HOTSTREAM HEATER CO.
"Makers of Heaters that Heat"
Cleveland, Ohio

HOTSTREAM GAS PRESSURE HEATERS

3 Times the Profit!

Every time you sell a Whale-bone-ite Seat you make three times the profit possible on a staple job. Don't waste time soliciting orders for cheap seats at a minimum profit when a little salesmanship will bring you an order for a Whale-bone-ite Seat at a real profit. And the Whale-bone-ite sale means a satisfied customer.

WHALE-BONE-ITE TOILET SEAT
THE BRUNSWICK-BALKE-COLLENDER COMPANY · CHICAGO

IT PAYS TO BUY GOOD TOOLS

For Lower Threading Costs

Buy the New No. 11-A 1 to 2 in. Ratchet Beaver. The biggest improvement in die stocks in 20 years. All leading jobbers carry it in stock.

THE BORDEN COMPANY
510 Dana Ave., Warren, Ohio

BEAVER
TIME and LABOR SAVING TOOLS

qualified for the Heatherton trophy was won by Mr. O'Neil, who was one stroke ahead of Mr. Oleson. Mr. Pryor was in third place. The guest prize went to A. J. Walsh.

Morning Round
Best-Ball Foursome
Class A

Players	Gross	Handicap	Net
Cosgrove and Cooney	91	15	76
Kellogg and Scott	89	17	72
Garfield and Carrier	79	.....	79
Bookhout and Peck	88	17½	70½
Hook and Murray	83	10½	72½
Townsend and Wolff	82	6	76
Townsend and Burtenshaw	84	6½	77½
Class B			
Cordner and Pryor	94	24½	69½
Koithan and Pryor	99	25½	73½
Dougherty and Ewald	102	32	70
McDonald and Davis	87	19½	67½
Barnum and Haire	93	30	63

Afternoon Round
18-Hole Handicap
Class A

Players	G.	H.	Net	Players	G.	H.	Net
O'Neil, L. M.	86	15	71	Engle, A.	106	17	89
Cosgrove, W. M.	88	16	72	Wolff, R. A.	93	7	86
Scott, G. M.	95	16	79	Townsend, H.	94	5	89
Garfield, J. B.	82	0	82	Burtenshaw, W.	95	8	87
Carrier, S. C.	82	0	82	Law, J. K.	88	8	80
Wood, C. S.	96	18	78	Murray, F. A.	89	8	81
Bookhout, Ray	104	18	86	Hook, M. G.	102	13	89
Peck, R. F.	99	17	82	Page, E. H.	91	7	84
Cooney, P. L.	106	14	92	Cochran, Thos.	98	15	83
Class B							
Oleson, W. H.	100	28	72	Ewald, J.	109	36	73
Murphy, W. H.	103	19	84	Dougherty, T.	103	28	75
Conroy, E. F.	107	26	81	Haire, Douglas	112	30	82
Cordner, M. A.	108	24	84	Williams, E. G.	109	31	78
Soule, Larry	112	25	87	Pryor, R. W.	99	25	74
Davis, W. A.	105	19	86	Carrier, W. H.	99	20	79
Koithan, W. S.	118	36	82	Chester, T.	110	17	93
McDonald, J. C.	91	20	71	Lyle, J. (Guest)	124	..	..
Kellogg, T. M.	100	24	76				

MICHIGAN TRADE GOLFERS HOLD SEPTEMBER MEET

The regular meet of the Michigan Trade Golf Association was held Friday, September 14, at the Tam O'Shanter Country Club. The Tam O'Shanter course is being revamped so the playing was done on the Orchard Hills course. Both clubs are among the finest in the district, Walter Hagen being one of the active members of the Tam O'Shanter club. The day was ideal and the course in perfect shape.

William Brown, of the Carey Co., was host and much credit is due him for the smoothness with which the meet went off.

The scores for the day follow:

	G.	H.	N.		G.	H.	N.
J. E. Hibbard	95	14	81	E. Bitzer	115	..	..
E. L. Kline	105	20	85	H. F. Abraham	104	20	84
A. A. Emerick	98	28	70	L. A. Lee	114	32	82
T. P. West	95	20	75	J. Stewart	101	28	73
L. L. Mc-Conachie	103	32	71	L. Sonneborn	138	..	..
"Bob" Fothergill	114	..	..	Ed. Glanz	102	..	..
J. Hughes	116	..	..	Ed. Sheely	103	20	83
T. Sherman	95	..	..	F. P. Field	108	..	..
Jack Bassler	101	28	73	H. H. Huston	107	24	83
H. Rylander	121	32	89	C. B. Richardson	105	28	77
S. L. Franklin	94	20	74	C. W. Gudnau	114	35	79
R. F. Connell	100	25	75	C. E. Schley	116	30	86
B. N. Paddock	74	7	67	S. Miller	87	8	79
H. M. Armstrong	93	20	73	E. Donahue	102	16	86
R. K. Milward	97	30	67	F. Cooper	116	28	88
R. W. Tempest	102	18	84	R. Deppman	108	30	78
R. C. Stableford	115	22	93	C. Soderberg	90	9	81
J. W. Bassett	93	14	79	H. Partz	103	15	88
Fred Barton	133	30	103	W. B. Johnston	93	16	77
J. B. Whiteford	104	28	76	H. A. Schwartz	92	12	80
E. J. Anderson	87	..	..	Wm. Boales	127	32	95
				D. W. Kenney	127	32	95

CENTRAL TRADES GOLFERS HOLD SEPTEMBER MEET

John Robertshaw of the Robertshaw Thermostat Co., Youngwood, Pa., was host to the Central Trades Golf Association on Wednesday, September 5, at the Greensburg Country Club. Splendid weather, a good crowd and a snappy course were the factors that made the meet one of the best ever held by the association.

The meeting, which was held directly after dinner, was presided over by Edward Kunde, vice president, and F. A. Vance, handicapper, awarded the prizes.

W. Brewton won the silver loving cup with a net 71. The Iron cup was won by Robert Gormley with a gross 126. The foursome winners were John Robertshaw, Mr. Kahley, Carl Gauerman, N. Blackmore, C. M. Fenner, W. H. Howe, all receiving 6 balls.

F. A. Vance won 6 balls for low gross of 78. It was decided to hold the last meeting at Pittsburgh Field Club sometime during the second week in October.

It was also announced that the September meeting of the Tri-State Golf Association would be held at Cambridge Springs, Monday, September 17, and the members were urged to be there on Saturday or Sunday in order to get in a qualifying round before the tournament on Monday.

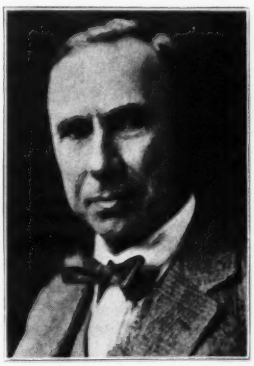
The scores:

	G.	H.	Net		G.	H.	Net
C. M. Fenner	109	35	74	Mr. Kahley	109	35	74
Mr. Claypool	101	Guest		Robt. Gormley	126	35	91
Mr. Martin	121	Guest		R. Jones	122	Guest	
E. W. Stitt	111	35	76	Carl Gauerman	102	25	77
W. H. Howe	110	35	75	J. McKissock	103	25	78
Mack Snively	94	18	76	W. S. Appleby	97	14	83
Leo Potvin	125	35	90	Edward Kunde	114	30	84
John Robertshaw	81	6	75	H. Semler	105	18	87
E. Anderson	No card			R. P. Wettstein	118	30	88
F. A. Vance	78	3	75	N. Blackmore	97	12	85
C. C. Adams	88	6	82	W. Brewton	106	35	71

M. ROSSENBERG CALLED BY DEATH

M. Rossenberg, of B. T. Babbitt, Inc., died suddenly in Indianapolis on September 17. Mr. Rossenberg has been connected with the trade in New York City for nearly a score of years, serving many years with Dimock & Fink Co. He was making his first trip to Indianapolis for the Babbitt firm and had been in the city only about an hour when his death occurred. The body was brought back to New York and the funeral held on September 21. Mr. Rossenberg leaves a widow and a daughter.

PAUL ARMSTRONG CALLED BY DEATH



Paul Armstrong

Paul Armstrong, president and one of the founders of Armstrong Brothers Tool Co. and Armstrong-Blum Manufacturing Co. of Chicago, died at his home at River Forest, Ill., on Thursday, September 20, in his sixty-sixth year. He had been in failing health for several months. His widow and six children—Lennox, Horace, Paul, Mrs. Stanley Woleben, Betty and Jean—survive him. The three sons and four nephews—George, John O., Hugh W., and William Armstrong—continue in the active management of the concern founded by the deceased.

He was born January 13, 1863, in Perth, Scotland, and came to this country at the age of three, when his parents

Pipe Fitting with the Oxyacetylene Torch and AIRCO 99.5% PURE OXYGEN

Many contractors have found Oxyacetylene cutting and welding to be the most desirable and economical method of installing much of their pipe work. This is especially true if they use Airco Oxygen—every cylinder is guaranteed and stamped 99.5% Pure.

We Manufacture

Airco Oxygen Airco Acetylene
Airco-National Carbide
Airco-Davis Bournonville Equipment and Supplies

AIR REDUCTION SALES COMPANY

Manufacturers and distributors of Airco Oxygen, Airco Acetylene, Airco-National Carbide
Airco - Davis - Bournonville Welding and Cutting Apparatus and Welding Supplies

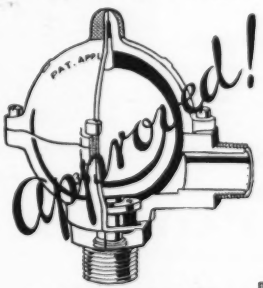
Baltimore, Birmingham, Boston, Buffalo, Charlotte, N. C., Chicago, Cleveland, Dayton, Detroit, Emeryville, Calif., Jersey City, Los Angeles, Milwaukee, Minneapolis, Oklahoma City, Philadelphia, Pittsburgh, Richmond, Seattle, St. Louis, Wheeling

Home Office: 342 Madison Ave., New York City, N. Y.
66 Plants 21 District Offices

Use an officially-approved relief valve

RED Top Relief Valves bear the official approval of the Underwriter's Laboratories, Inc. and State and Municipal Boards of Water and Boiler Inspection.

This approval is based on the positive action of the valve. A Red Top works on the gravity principle, pressure in the system causing the valve to open. At 30 lbs. in the case of the Model No. 2 Valve. At 50, 75, 100 or 130 lbs.—whichever set for—in the Model No. 1.

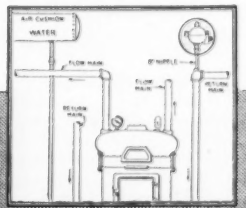


Red Top Relief Valve Model No. 2, Approved by the Underwriters' Laboratories, Inc.

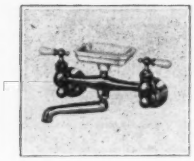
The construction is simple and sturdy. There are no springs, levers, diaphragm or other complicated mechanism to get out of order.

May we send you further data?

Neptune Meter Co.
50 E. 42nd St. New York City, N. Y.
Branch Offices in Principal Cities



Red Top Relief Valve
Pressure System of Hot Water Heating



Swing Spout Faucets—

Wolff "Duro" Brass double swing spout sink faucets are designed by experienced craftsmen. Our new Catalog "G" illustrates the complete line.

WOLFF CO.
Superior Plumbing Fixtures"
CHICAGO

Improved "Barnes" Type Pipe Cutter
from the **ARMSTRONG BROS.**
Line of Better Pipe Tools

This 3-wheel Barnes type is especially adapted to work where the cutter cannot be revolved entirely around the pipe.

Bodies of Certified Malleable Iron—Pins of carefully hardened tool steel. Wheels of special Alloy Tool Steel—Improved Knife Blade Design—Cut faster, last longer.

Write for Catalog P-10
ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
323 N. Francisco Ave. Chicago, U. S. A.

P.B.F.

EVERY FITTING AIR TESTED UNDER WATER

PHOENIX BRASS FDRY.
Irvington, New Jersey

Watrous

Patent Plumbing Fixtures and Duojet Water Closets

A LINE representing the most advanced ideas in sanitation. Economy of operation and ease of installation. Duojet Closets—Flush Valves—Self-Closing Basin Cocks—Combination Lavatory Fixtures—Pop-Up Wastes—Liquid Soap Fixtures, etc.

Manufactured and Sold Exclusively by

THE IMPERIAL BRASS MFG. COMPANY
1231 West Harrison St. CHICAGO

made Chicago their home. In 1893, while still a young man, he, with his brothers—John, who died in 1923; Hugh, who died in 1925, and James, who retired shortly after—founded the Armstrong Brothers Tool Co. for the manufacture of machinists' tools.

Mr. Armstrong was a member of Saint Andrews Society, Lafayette Council, Knights of Columbus, Oak Park Country Club, Chicago Yacht Club and the Machinery Club.

WESTERN TRADE PLAYS GLEN OAK

The Western Trade Golf Association of Chicago played its September tournament at Glen Oak Country Club, September 21, with W. H. Chenoweth acting as host. An excellent day, combined with a good course and club accommodations, made this meet one of the most enjoyable of the season, attracting a total attendance of 53 members and guests. President Monaghan awarded prizes at the evening meal.

Ernest Ashby, with a 99-28-71, won the association cup, as well as first prize in his class. He chose a sweater and hose set. H. J. Bradley was winner of the morning qualifying round, his prize being a golf bag. First in classes A and B was A. E. Norman, Jr., with W. H. L. Smythe, runner-up. The respective prizes were a sweater and hose set and a pair of hose. W. E. Foskett was first in class C, winning a duffel bag, and J. J. O'Shea was second, his prize being a dozen golf balls. M. S. Good was runner-up to Ashby in class D, a pair of knickers being his choice. Blind bogey prize, a pair of knickers, was won by R. E. Moore. John Howatt's gross 89 won him the guest prize, and the duffer's cup went to John D. Small. The scores:

	Morning			Afternoon		
Player	Gross	Hcp.	Net	Gross	Hcp.	Net
J. A. Corboy (Guest)	...	...	...	97	...	...
P. M. Munn	55	15	40	112	30	82
J. M. Grace	55	15	40	120	30	90
E. F. Olsen	...	...	...	99	...	...
H. J. Bradley	37	2	35	84	4	80
G. C. VandenBoom	53	11	42	97	21	76
John Howatt (Guest)	46	...	...	89	...	...
J. A. Cutler	50	7	43	95	14	81
H. G. Thomas	46	10	36	96	19	77
A. B. Martin	53	12	41	110	25	85
T. H. Monaghan	...	...	...	110	30	80
A. E. Norman, Jr.	...	...	...	79	3	76
S. A. Pope (Guest)	...	...	...	107	...	...
C. F. Olsen	...	...	...	90	10	80
P. V. Hyland	58	15	43	119	30	89
R. P. Corse (Guest)	68	...	...	124	...	...
J. Duval (Guest)	...	...	...	98	...	...
E. Nettenstrom (Guest)	54	...	...	96	...	...
R. E. Moore	56	11	45	99	22	77
C. E. Price	58	13	45	110	26	84
W. N. Pincus	...	...	...	103	25	78
N. P. Fenner	45	6	39	91	13	78
W. A. Taylor	...	...	...	98	18	80
W. H. L. Smythe	...	...	...	86	10	76
M. S. Good	60	13	47	102	27	75
John Small	68	15	53	142	30	112
L. W. Charlet	61	15	46	108	30	78
W. E. Foskett	53	11	42	96	22	74
L. J. Pitcher	...	...	...	93	12	81
J. J. O'Shea	...	...	...	97	23	74
G. E. Tebbetts	...	...	...	106	20	86
F. Hoyt (Guest)	...	...	...	101	...	...
E. Ashby	52	14	38	99	28	71
H. Hugheson (Guest)	61	...	...	106	...	...
J. C. Matchett	58	13	45	103	27	76
W. T. Walters	55	15	40	109	30	79
G. Petesch (Guest)	48	...	...	104	...	...
J. V. Brunner	56	12	44	104	25	79
H. E. Crum, Jr.	50	10	40	102	21	81
J. Kelly (Guest)	64	...	...	128	...	...
E. C. O'Connor	...	...	...	93	16	77
F. S. Kiley (Guest)	...	...	...	123	...	...
A. F. Winterble (Guest)	...	...	...	121	...	...
F. P. Kuchenbecker	...	...	...	115	30	85
Roy Getschow (Guest)	62	...	...	108	...	...
W. F. Thumm	57	15	42	108	30	78
E. M. Tennant	49	9	40	103	18	85

Personal Mention

W. C. Cochrane, vice president and general manager of sales for the Detroit Brass & Malleable Works and the Detroit Sanitary Mfg. Co., Detroit, recently made a business trip to New York City, calling on wholesalers in the Eastern district.

George C. Hamill, New York City manager of the A. M. Byers Co., is taking a two weeks' vacation, making an automobile tour.

Edwin R. Anthony, Jr., has been appointed manager of sales at the San Francisco branch of the American Radiator Co., with headquarters at Fourth and Townsend streets. Mr. Anthony has been connected with this company at its Oakland branch for the past fourteen years.

William C. Dickson, formerly with the Bridgeport Brass Co., has joined the sales force of the Capitol Brass Works, Detroit, Mich. Mr. Dickson will represent the company in Chicago and northern Illinois, Wisconsin, Minnesota, Iowa, Nebraska and Missouri, exclusive of St. Louis.

George L. Fitz, representing the McAlear Mfg. Co. in the metropolitan New York district, has removed his offices to 1170 Broadway, New York City.

Earl K. Williams announces the removal of his office and showroom to 280 Madison avenue, New York City. Mr. Williams represents The Sands Mfg. Co., Cleveland, the Dole Valve Co., Chicago, and the L. R. Oatey Co., Cleveland, in the metropolitan territory.

Saul E. Ungerleider, who has been connected with Mayer Malbin, New York City wholesaler, has been promoted to the sales force. He will cover Bronx Borough territory.

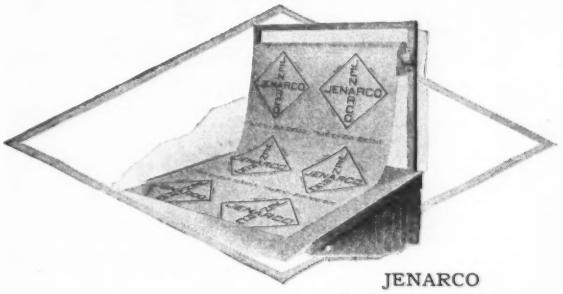
R. Evans. Salmon, who has been selling plumbing and heating material in China for many years, has just joined the staff of The Pacific Trading Company at 13 Peking road, Shanghai, China, as outside sales representative. He was formerly sales representative for C. J. Doughty & Co. of Shanghai. The Pacific Trading Co. is manufacturers' agent and represents among other concerns the Standard Sanitary Mfg. Co. in China.

NEW JERSEY GOLFERS RAINED OUT

The Plumbing and Heating Trades Golf Association of New Jersey held its monthly meet at the Braidburn Country Club, Madison, N. J., on Thursday, September 13.

Scores generally were rather high, many members finding the course hard, with the first and tenth holes the main troubles. At the dinner, where prizes were awarded, three honorary members were elected, these being A. Schober, who was host for the day, Michael P. Duffy, commissioner of public safety in Newark, and Neil Convery, an architect. Each of the three, and William A. O'Hara, of the Johns-Manville Corp., another guest, made brief talks, as did various members.

It was announced by Captain Edward M. Robinson that the four men in each of the two classes who had the best medal scores for the first four meets of the season would play together at the October meet to determine the winners of the season prizes, to be awarded at that time. Prize winners for the blind par contest in the morning proved to be A. Tesch, Spencer Heater Co., who took a mashie, and John E. Joyce of Newark, who selected a pair of knickers. Class A winners in the afternoon were L. A. Del Tufo of Newark; Stanley Miller, also of Newark; J. La Due, Jenkins Bros.; Ray Moody, Sloan Valve Co.; Fred Engelberger of Newark, and Captain Robinson, who is with William S. Roe. A leg on the Engelberger cup and first prize in Class B went to William J. Patterson,



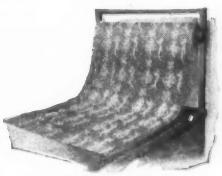
JENARCO
A red packing for hot or cold water and saturated steam at all pressures.

Fitting the service as well as the flange

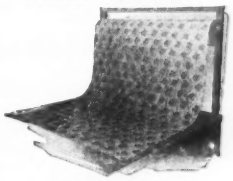
For permanently leak-proof joints, the material to be used must fit the service, must resist the action—physical or chemical—of the fluid carried in the piping.

It's a simple matter to select the material for the job from the several brands of Jenkins Packings available in both sheet and gasket form. Each brand has certain clearly defined services for which experience has proved it suitable.

All these leak-stopping materials have one common characteristic — all are made to the same high standards that have distinguished the manufacture of Jenkins Valves and Packings for over 64 years.



JENKINS '96
A black packing for hot or cold water and saturated steam at all pressures.



COMPRESSED ASBESTOS JOINTING
For high pressure superheated steam.

Write for this folder of Packing Recommendations
The Jenkins Gasket and Packing folder tells the services for which each of the various brands are recommended.

JENKINS BROS.
80 White Street....New York, N. Y.
524 Atlantic Avenue...Boston, Mass.
133 N Seventh St...Philadelphia, Pa.
646 Washington Blvd....Chicago, Ill.

JENKINS BROS., Limited
Montreal, Canada London, England

Jenkins Packing
JENARCO 96 96 96 96 96 96 96

RICHMOND PRODUCTS.....

LAUNDRY TRAY LEGS
(Alberene Pattern)

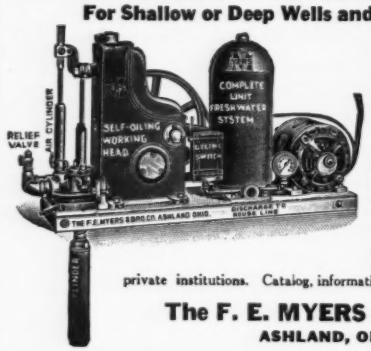
These Laundry Tray legs of the Alberene pattern are the good old products that have proven themselves time and again. Don't take a chance when you know you can get the best there is by buying equipment you are acquainted with

Write for our catalog

RICHMOND
Foundry & Manufacturing Co.
RICHMOND, VIRGINIA

"A DEPENDABLE SOURCE OF SUPPLY".....

MYERS DIRECT WATER SYSTEMS
For Shallow or Deep Wells and Cisterns

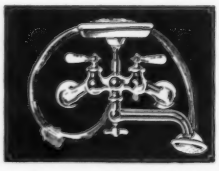


Equipment includes pump, air chamber motor, belt, automatic switch, gauges and valves, and all fittings mounted on plank ready to connect up with power and water lines.

Does not require a storage tank. Pumps fresh water direct from well to faucets. Automatically controlled without waste of power or water. Ample capacity for home or farm purposes. Other styles and sizes for homes, farms, public and private institutions. Catalog, information and prices on request.

The F. E. MYERS & BRO. Co.
ASHLAND, OHIO

Classic Sink Fixture

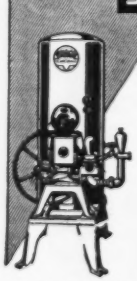


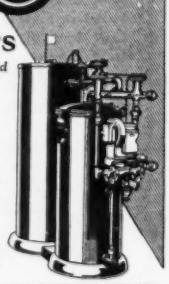
Father of all the other combination sink fixtures and far and away the biggest seller of the lot. You'll make no mistake to to keep on selling Classics, no matter how many substitutes come hammering at your door.

CHICAGO FAUCETS

The Chicago Faucet Co.
2700-22 N. Crawford Ave.
Chicago, Ill.

DURO
Water Softeners
Automatic Semi-Automatic Hand Operated
Electric Water Systems
For Shallow or Deep Wells
Filters + Septic Tanks
Let us send you new Price Sheet and all details on Duro Finance Plan which makes sales easy.
The Duro Company
800 Monument Ave. Dayton, Ohio


VERTI-TANK WATER SYSTEM


AUTOMATIC WATER SOFTENER

Newark plumber, other prizes in this class going to W. C. Clift, Bowden Co.; Herman Baumgartner of Newark; Joseph Hogan, United States Radiator Corp.; W. H. Oleson, and Maurice Bal of Jersey City. The scores:

	Class A —Morning— Blind Par Contest			—Afternoon— 9 Holes Medal Play		
Name	G.	H.	Net	G.	H.	Net
Robinson	53	9	44	51	12	39
Hedges	61	19	42	58	12	46
Engelberger	61	14	47	55	12	43
Del Tufo	48	26	22	45	12	33
Miller	49	12	37	46	10	36
Moody	64	12	52	49	10	39
LaDue	43	3	40	41	3	38
Owen	57	13	44	55	10	45
Class B						
Buckley	59	19	40	66	15	51
Hogan	42	13	29	52	16	36
Carr (Guest)	49	..	..	56	..	..
McMahon (Guest)	63	..	..	66	..	..
O'Hara (Guest)	58	..	..	55	..	..
Thomas (Guest)	55	..	..	56	..	..
Rogers (Guest)	64	..	..	59	..	..
Clift	52	16	36	52	18	34
Patterson	..	..	..	53	21	32
Duffy (Guest)	..	..	..	66	..	..
Rogers	..	..	..	60	19	41
Tesch	56	22	34	61	19	42
Oleson	..	..	..	52	15	37
Byrne	..	..	..	69	20	49
Joyce	52	16	36	54	16	38
Boone (Guest)	..	..	..	70	..	..
Kreuger (Guest)	76	..	..	65	..	..
Bal	57	36	21	56	18	38
Smith (Guest)	67	..	..	78	..	..
Bender	63	36	27	58	18	40
Baumgartner	53	14	39	48	13	35
Elder	..	..	..	67	18	49
Watson	..	..	..	51	11	40
Schober (Guest)	58	..	..	67	..	..
Buday	81	20	61	83	23	60
Goodwin	72	16	56	60	18	42
Hamilton	68	18	50	64	18	46
Tobin	59	18	41	58	15	43
Fligon	70	20	50	64	20	44
Taaffe	83	30	53	..	..	..

Top picture: A. A. Taaffe and Herman Baumgartner, both of Newark. Bottom picture, back row: J. A. Byrne of J. B. Wise, Inc.; A. J. Tesch of Spencer Heater Co. In front row: William Watson, Belleville master plumber, and E. J. Bender, of Pierce, Butler & Pierce Mfg. Corp.

Markets

(Continued from Page 64)

factory representatives in this district, but the aggregate tonnage consumed did not show any considerable increase over former weeks. Master plumbers are evincing comparatively more interest in finishing products than for roughing goods. Whatever needs for soil pipe are presented are usually promptly taken care of from the well regulated stocks of jobbers.

Pipe—Brass, Steel and Wrought Iron

Makers of brass pipe announced a ¼ of a cent per pound advance in their prices during the week. This action, together with a similar revision by wholesalers in prices to their trade, created considerable expansion of buying of this commodity. Distributors' purchases of steel pipe are of continuing good nature, their stocks being maintained at good levels, especially for the constantly growing requirements of the heating trade. Wrought iron mills are in receipt of satisfactory tonnages for this time of the year. Producers of wrought iron and steel pipe have effected no price changes.

Fittings

When jobbers discuss shipments from a monetary standpoint, their dispositions of cast iron and malleable fittings appear small in comparison with their turnovers of pipe and fixtures, yet withdrawals by contractors are of such improved nature that these classes of fittings comprise a substantial part of weekly sales. Manufacturers' bookings are not presently extensive, for most distributors have ample stocks on hand or are drawing on contracts entered into previous to recent price advances. It is reported that brass fittings are moving into consumption at a quite steady pace.

Enameled Ware

Both makers and jobbers continue to be well occupied in their shipments, new bookings and granting of quotations. Most orders are marked for immediate delivery, for while the average wholesaler has ample varieties for his present needs, he is not overstocked and must necessarily come into the market more frequently for quick replenishments. Local warehouses of manufacturers are said to be enjoying quite active sales.

Pottery

Master plumbers continue to order staple pottery in sufficient volume to give the majority of wholesalers some concern over the upkeep of their stocks. Makers find that their shipments of special ware are on the increase as the season advances. Several potters are slightly delayed in their forwardings of ordinary bowls and tanks, but shipments otherwise are being fairly promptly executed. Makers' prices were unchanged and of continuing firm nature during the week.

Plumbers' Brass Goods

Contractors are busy in their installations of cast and tubular products, which condition reflects in the better sales of this commodity by wholesalers. The latter, in many cases, do not appear keenly interested in taking into their warehouses more stocks than they think necessary for the next 30-day requirements. Factories are enjoying quite steady shipments and are not embarrassed when quick deliveries are called for. During the week several tubular makers advanced their prices to jobbers an average of about 5 per cent.

Range Boilers

Plumbing contractors are drawing on jobbers' stocks in fashion which makes for good sales for the latter when taken over weekly periods. Makers continue active in

PENBERTHY PRODUCTS
THE FEATURES THAT SELL THE PENBERTHY AUTOMATIC CELLAR DRAINER
Completely automatic . . . needs no priming. No waste of pressure water . . . no overflow or leakage. Compact . . . possible to use a smaller sump than with any other equipment of like capacity. No corrosion . . . brass, bronze and copper throughout. No interference from slime or floating material . . . all working parts above water level.

Established 1886

PENBERTHY INJECTOR COMPANY

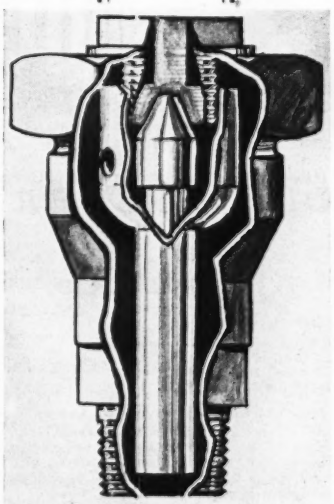
New York Office 71 Beekman St

DETROIT

Canadian Plant Windsor, Ontario

DONNELLY GUARANTEED VACUUM VALVE

This Donnelly Valve is GUARANTEED to break any vacuum from one inch up. It is the only guaranteed Valve on the market. Why not take advantage of this absolute protection?



We are so sure of the absolute perfection of this valve, that if we hear of an instance of boiler collapse where this valve has been installed in accordance with directions accompanying each valve, we will give the owner a new boiler free of charge.

Install a Donnelly Guaranteed Relief Valve and back your guarantee with ours.

Catalog will be sent on request

DONNELLY MFG. COMPANY, Inc.

29 Mills St. *N. Y. Rep.: Henry Stein, 50 Cliff St., N. Y. C.* Malden, Mass.

CLIMAX SPECIALTIES

TEST PLUGS

MADE FOR EVERY KIND OF PIPE TO GIVE A PERFECT TEST EVEN UNDER THE MOST ADVERSE OF CONDITIONS. CLIMAX TEST PLUGS WILL DO MORE THAN SAVE YOUR TIME. THEIR ECONOMY CAN BE TRACED RIGHT TO THE PROFIT SHEET.

The Climax No. 1 Cellar Drainer is a big money maker this time of the year. Write for our complete catalog.

ASK YOUR JOBBER

THE C. M. KEMP MFG. CO.
MANUFACTURERS OF
PLUMBERS' SPECIALTIES
405-415 E OLIVER ST
BALTIMORE, MD. U.S.A.

Chicago, Ill.: OSCAR C. ANDERSEN, 627 Washington Blvd.
Southern Agents: J. M. BUTTS & CO., 733 Healey Bldg., Atlanta, Ga.
Pacific Coast Agents: WM. P. HORN CO., 58 Federal St., San Francisco, Cal.
509 Wilcox Bldg., Los Angeles, Calif; L. C. Smith Bldg., Seattle, Wash.
Philadelphia, Pa.: DERBYSHIRE & MACK, 929 Real Estate Trust Bldg.
New York City: A. W. DRAKE, 66 West Broadway
New England: ROBERT McKEOWN, JR., 46 Cornhill, Boston, Mass.
JOHN W. STILES & SON, 700 Prospect-Fourth Bldg., Cleveland, Ohio
W. F. HARPER, 3733 Lindell Blvd., St. Louis, Mo.,

production and are in receipt of satisfactory business, comprised mostly of small-lot orders of jobbers.

Boilers and Radiators

Some extension of heating contractors' activities was noted during the week in the way that better placements came to manufacturers' and distributors' hands. Sources are well supplied to care for whatever increased demand might obtain and are presently making deliveries on short notice. No new price sheets were issued by makers.

PACIFIC COAST

Prices Vary In Different Centers—

September business so far has shown very little if any increased activity and business generally seems to be keeping at the same level as it has maintained for the past few months.

During the early part of the week a number of wholesalers in Southern California lengthened their quantity discounts on some items. A somewhat similar change is reported to have been made in Portland, Ore. However, in Seattle, Wash. and Northern California, jobbers have not changed their prices.

Soil Pipe

Recent reductions in out of stock prices by most California jobbers have resulted in some increase in business, but on the whole the demand for this commodity is not heavy. Distributors have sufficient stocks on hand and enroute from foundries to enable them to fill all of the trade's requirements without delay.

Pipe—Steel and Wrought Iron

A normal tonnage for this period of the year of these commodities is moving at present, although most of the inquiries are in small-lots for immediate requirements. There are many stocks, especially steel, available to the trade, all of which are in good condition, with the result that most of the trade can obtain delivery on any order of this commodity irrespective of size.

Fittings

The past week did not show any increase of activity in the demand for fittings, most of the trade being satisfied with purchasing only such fittings as required for immediate consumption. Manufacturers' warehouses in the principal Coast jobbing centers are carrying good stocks and prompt delivery can also be secured by distributors from all their manufacturing sources.

Enameled Ware

This commodity did not show any noticeable change in demand from previous weeks. Most of the orders being shipped at present are for work contracted for earlier in the season and the buildings which are now ready for merchandise to be installed. Very few orders are being received for future delivery. Distributors and manufacturers generally have well balanced stocks.

Pottery

This commodity continues to move in a steady although not heavy volume, the trade purchasing only such ware as is required for immediate use and few if any orders being placed for future delivery. Stocks in distributors' hands are sufficient to take care of all of the trade's requirements and Coast potteries can make prompt deliveries.

Plumbers' Brass Goods

The demand for plumbers' brass continues to be good, sellers reporting a good consumption for replacement work. Distributors generally are carrying sufficient stocks to take care of the trade's immediate requirements, replacing their merchandise in about the same volume as sales. Prompt delivery can be had from all manufacturing sources.

Gas Refrigeration

(Continued from Page 39)

In installing these, the by-pass should be completely shut and the leakage past the piston valve, which is loose-fitting, determined. If the leakage is insufficient, the by-pass valve should be cracked to give the leakage desired. This leakage should be approximately a little less than two gallons per hour. This is roughly 1 pint in 4 minutes or 1 cupful in 2 minutes. Adjustment must be made when water is cool.

As the cooling water is heated up, the warm water, due to the leakage, moves to the water valve, and when the bellows reach the temperature of 90 degrees F., they move downward allowing the water not only to leak past the piston, but also to pass from one port to the other by means of a slot in the piston-valve. This allows a greater flow of water to pass through the valve. As the temperature of the water in the valve falls, the bellows cools. contracts and shuts off the ports.

The purpose is to lessen the consumption of cooling water. When first installing the water valve, it sometimes becomes air bound. This may be overcome either by opening the by-pass valve wide, so as to flood the valve, or else by filling the valve with water before the valve is attached to the water lines.

Fig. 6 illustrates a strainer which gives adequate protection against sediment in water and should be installed and connected in the water line leading to the refrigerator and as close to the house line as possible. It is tapped with ¼-inch pipe thread.

To flush out the mud and sediment, all that is necessary is to open up the small drain cock located at bottom of the strainer. The strainer should be cleaned at regular intervals, depending upon water conditions.

The strainer may occasionally require a thorough cleaning. This can be accomplished by unscrewing the sediment bowl and cleaning the copper screen with a small brush.

The gas burner employed in this refrigerator is of great interest to gas men. This principle, in so far as the writer is aware, is used for the first time for controlling a gas stream. It consists, in its simplest form, of a dished disc attached to a valve stem. By simply keeping this disc heated, the valve is held open and gas allowed to flow from the supply pipe to the burner nozzle. Should the flame become extinguished, the disc will snap in the reverse direction and, being attached to the valve, the valve port is thereby closed, and the gas flow interrupted. It is a safeguard against asphyxiation or possible explosion hazards. This device has proved useful in keeping electrical laundry irons at predetermined temperatures.

The burner construction is shown in detail by figure No. 7.

Every refrigeration salesman has no doubt heard the gist of the question, "What will happen when the ammonia dissociates or breaks up into its elementary components?"

This is a favorite question with engineers operating commercial ammonia ice plants.

At temperatures under 300 degrees Fahrenheit, ammonia is a very stable gas, and as the temperature in this refrigerator never exceeds that of boiling water the effect of heat need not cause worry. On the other hand, since ammonia causes inconsequential, if any, corrosion when contained—as it is—in iron piping and containers, detrimental chemical action may be eliminated.

The non-condensable gases found in commercial ammonia ice plants are due to either or both of the following

CAPITOL

STA-PAK VALVES

Pat. Applied for

They Never Need Re-packing

CAPITOL BRASS WORKS

Division of Michigan Smelting and Refining Company

MANUFACTURERS OF BRASS VALVES, BOILER TRIMMINGS AND PLUMBERS' BRASS GOODS

DETROIT, MICH.

BY SPECIFYING Heggie-Simplex Steel Boilers, architects and building committees for many important structures have endorsed what Heggie's 35 years have accomplished—the most modern of heating boilers, in which scientific design combines every essential with preeminent quality.

HEGGIE-SIMPLEX BOILER COMPANY

JOLIET, ILLINOIS

Representatives in Principal Cities

The FAMOUS Sylphon TRADE MARK BELLOWS

Original—Genuine

Sylphon Temperature Regulators, Pressure Regulators and Expansion Joints are in almost universal use, in thousands of buildings, in nearly all industrial plants, in great power plants, and in the homes of the people.

The Fulton Sylphon Company, Desk K Knoxville, Tenn., U. S. A.

More and more, the tendency is toward something not only highly efficient in heating, but pleasing to the eye as well. McKeesport Radiators accomplish both of these points to greatest satisfaction.

McKEESPORT RADIATION

THE COLUMBIA RADIATOR COMPANY

McKEESPORT, PENNA.

Any mechanic can adjust the Nelson Relief Valve to take care of any required pressure from 1# to 175#, in a few seconds.

The external phosphor bronze spring assures perfect functioning at all times.

Positive safety for your customers under all conditions.

"Built with a click"

When the maximum pressure adjustment is reached, you will hear a click

THE
STACK HEATER CO.
250 Stuart Street
BOSTON MASS.

A Real Relief Valve

causes: (a) Air leaking into the system or, (b) to the corrosive action of the ammonia liquor on the metal of the plant. As this refrigerator is sealed by welded joints the infiltration of air into the system is an impossibility.

Many years ago it was discovered that hydrogen would diffuse through or penetrate the walls of a metal container holding it. Many ambitious salesmen of electrically operated refrigerators have resuscitated and regilded this curious fragment of scientific experimentation. While the fact is of technical interest to engineers, the truthful salesman that "knows his ice" will not use it as an argument to divert a refrigerator prospect from a gas to an electrical refrigerator.

As the refrigerator described contains hydrogen under relatively high pressure, tests were arranged and conducted by Professors Borelius and Lindblom at the Royal Technical School at Stockholm, Sweden.

Applying the data so obtained to this unit, it was found that no danger exists of any immediate loss of hydrogen through the walls of the apparatus.

For instance, it has been determined that as much as 20 per cent of the hydrogen contained in the refrigerator may be lost without causing it to become inoperative. This 20 per cent loss, it has been calculated, would require one hundred and eighty years!

THIS WAS NEWS
1908
20 YEARS AGO

September 26, 1908.

The National Plumbing and Heating Supply Co., of Chicago, has been incorporated with a capital of $25,000. The incorporators are: A. M. Eberhardt, J. M. Kahn and T. J. Lawless.

———1908———

The Pittsburg Water Heater Co., of Pittsburgh, Pa., has leased the lower floor at 428 Penn avenue in that city, and will locate its city office and display rooms there.

———1908———

The Chapman Valve Mfg. Co., of Indian Orchard, Mass., has opened a store and branch office on the ground floor of the new Frankel building, 49 John street, New York City.

———1908———

Members of the Chicago Heating and Plumbing Trades held their third golf tournament of the season at the links of the Hinsdale Golf Club, Hinsdale, Ill., on Wednesday, September 23.

———1908———

W. H. Halsey, president of the National Association of Master Plumbers, has just made formal announcement of the membership of the board of directors who will act as his confidential advisers during the coming year. The following men have been named: T. A. Hill of New York City, E. D. Hornbrook of Kansas City, R. B. Moodie of Dayton, C. H. Cronin of Boston, C. P. Tietze of Detroit, John Trainor of Baltimore, Thomas J. Young of Mobile, A. Selden Walker of East Orange, N. J., C. J. Herbert of Chicago, Daniel Crowley of Oakland, Calif., and Harry F. Mellon of Wilmington, Del. Vice President Walter D. Nolan of Washington, D. C., Secretary Philip H. Murphy of Milwaukee, and Treasurer William McCoach of Philadelphia, will also serve on the board of directors by virtue of their offices.

Pave the way to more business

by pointing out the many advantages afforded by

BADGER
Copper Hot Water Boilers

at only a slight increased cost to the customer and a fair profit to you.

The all copper construction with the inside surface tinned all over insures complete protection from corrosion. No more red rust. No more muddy hot water. No prospective customer will overlook these facts.

Send for descriptive bulletin, price list and our very liberal trade discounts.

E. B. BADGER & SONS CO.
75 Pitts Street :: Boston, Mass.
NEW YORK 271 Madison Avenue
TULSA, OKLA. Mid-Continent Bldg.
Representatives in all Principal Cities

Convention Dates

October 10 and 11, 1928.—E. S. A.—The Fall meeting of the Eastern Supply Association, to be held at the Hotel Astor, New York City.

October 15 to 19, 1928.—A. P. H. A.—The fifty-seventh annual meeting of the American Public Health Association, to be held at the Stevens Hotel, Chicago. An exposition will be held in connection with the meeting.

October 24, 25 and 26, 1928.—C. S. A.—The thirty-fourth annual meeting of the Central Supply Association, to be held at the Palmer House, Chicago.

November 19-24, 1928.—COAL CONGRESS.—The Second International Conference on Bituminous Coal, at the Carnegie Institute of Technology, Pittsburgh, Pa.

December 3-8, 1928.—POWER EXPOSITION—The seventh annual National Exposition of Power and Mechanical Engineering, to be held at Grand Central Palace, New York City.

January 28, 29, 30 and 31, 1929.—A. S. H. V. E.—The annual meeting of the American Society of Heating and Ventilating Engineers, at Chicago, Ill.

February 5, 6 and 7, 1929.—OHIO—The thirty-eighth annual convention of the Ohio State Association of Master Plumbers, to be held in Mansfield, with headquarters at the Mansfield-Leland Hotel.

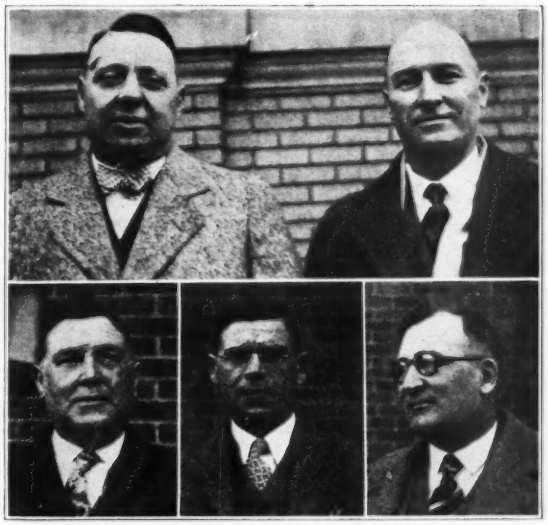
March 11, 12 and 13, 1929.—INDIANA—The thirty-third annual convention of the Indiana Society of Sanitary Engineers, to be held at South Bend.

March 11, 12 and 13, 1929.—VIRGINIA—The sixth annual convention and a two-day institute of the Virginia Associated Plumbing and Heating Contractors, to be held at Charlottesville.

May 6 and 7, 1929.—FLORIDA—The seventh annual convention of the Florida State Association of Master Plumbers and Heating Dealers, Inc., to be held at Daytona Beach.

May 23, 24 and 25, 1929.—N. A. P. H. S.—The fourth annual convention of the National Association of Plumbing and Heating Salesmen, to be held at Philadelphia.

June 25, 26 and 27, 1929.—N. A. M. P.—The forty-seventh annual convention of the National Association of Master Plumbers, to be held at Buffalo, N. Y., with headquarters at the Hotel Statler.



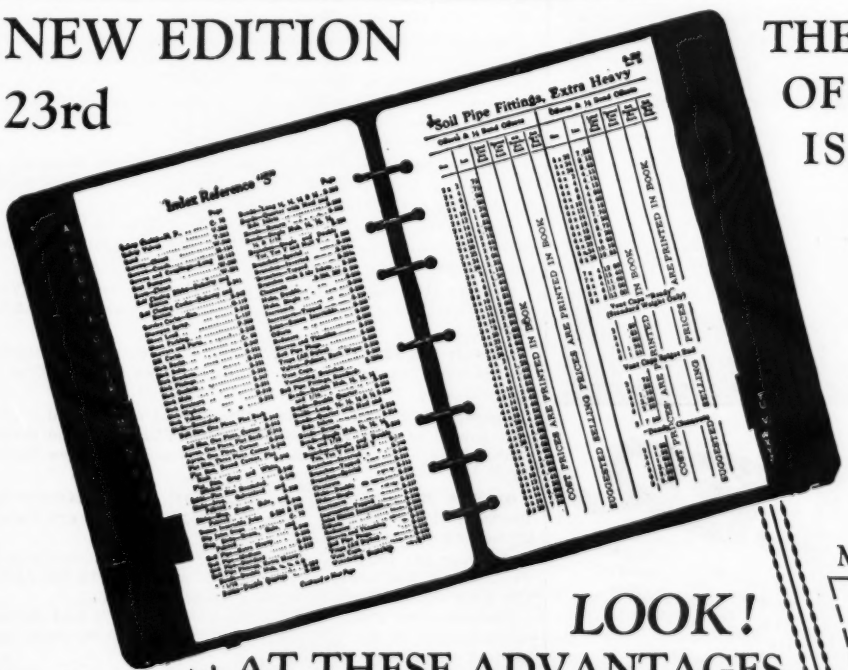
Top row: J. W. Darragh and Retiring President F. S. Popelka, both of Cedar Rapids. Bottom row: F. J. Garvey of Mason City; J. L. Zahrobsky of Mason City, new president; Lou Pray of Fort Dodge.—Photos taken at the recent convention of the Iowa Master Plumbers' Association

COMING TRADE EVENTS

September 29, 1928.—The annual outing of the Queensboro branch, Association of Master Plumbers of the City of New York, to be held at Narragansett Inn, L. I.

September 29, 1928.—The annual outing of the Newark Mas-

NEW EDITION
23rd



THE ADVANTAGE OF BEING SURE IS PROFIT!

When you estimate and are not absolutely sure that your estimate is correct in every detail you are apt to cause yourself the loss of hundreds of dollars.

There is only one way to be ABSOLUTELY sure. You must have some sort of a standard guide to assist you in this difficult work. The new 23rd edition of the Plumbers' and Steamfitters' Price Guide will not only make profits for you, but will assure you of satisfied customers because your estimates will be uniform. There is nothing complicated about it. You can figure accurately and correctly and be always ABSOLUTELY sure.

LOOK!
AT THESE ADVANTAGES

The Plumbers' and Steamfitters' Price Guide contains all the information regarding prices on equipment that you need to help you figure your work. It will pay for itself many times in the money and time it will save you.

Bareham & Saunders, 366 East Main St., Rochester, N. Y.

MAIL THIS COUPON

BAREHAM & SAUNDERS,
366 East Main St., Rochester, N. Y.
Gentlemen: Please send me at once full information about the *Plumbers' and Steamfitters' Price Guide* and how it will help my business.

Name.....
Address.....
City..... State.....
D.E.-9-22-28

Haas

Flush Valves for use in combination with all styles of bowls for all classes of service to operate under low or high pressure water supply.

Water Closets for every type or class of service.

Frost Proof Closets. Direct flush or after flushing.

Write for catalog.

Philip Haas Co., Dayton, Ohio

Build your reputation on LEAD *—the dependable metal.*

EAGLE-PICHER

SINCE 1905

Paragon SELF-CLOSING FAUCETS with renewable seats

SMOOTH ball-bearing action. Patented "Samson" Lock, which makes Paragon handles easiest to adjust without special tools. Longer wear — better action. A wide variety of bodies and handles. Write for folder on the complete line.

Through your Wholesaler.

The CENTRAL BRASS Mfg. Co.
PARAGON DIVISION CLEVELAND O.

SEMLER FITTINGS

We make all the cast iron fittings you need. Steam, Screwed, Flanged; Drainage and Sprinkler Fittings. We furnish them all.

Ask your jobber to supply you

Semler Company
Jeannette Pennsylvania

Top row: Mrs. and Mr. Walter Kirn of Akron; John A. Quinn of Philadelphia, national apprenticeship committee chairman. Bottom row: Walter Klie of Cleveland; Samuel Apple and Max Heller, both of Cleveland.—Photos taken at the recent convention of the Ohio Master Plumbers' Association

ter Plumbers' Association, to be held at Oakland, N. J.

October 3, 1928.—The final meet of the season for the Northwestern Ohio Trade Golf Association, to be held at Heather Downs, Toledo.

October 4, 1928.—The sixteenth annual outing of the Lynn Master Plumbers Association, Inc., to be held at the Ferncroft Inn, Middleton, Mass.

October 5, 1928.—Master Plumbers' night of the New Jersey Chapter, National Association of Plumbing and Heating Salesmen, to be held at Staubwasser's restaurant, Newark.

October 8, 1928.—The October meet of the Heating Trades Golf Association of Massachusetts, to be held at the Sandy Burr Club, Wayland, Mass.

October 8, 1928.—A golf meet to be held under the auspices of the Master Plumbers and Heating Association of Richmond, Va., at the Laurel Golf Course in that city.

October 8-12, 1928.—A. G. A.—The annual convention of the American Gas Association, to be held at Atlantic City, N. J., with headquarters at the Steel Pier.

October 10, 1928.—The October meet of the Heating and Ventilating Golf Association of Philadelphia, to be held at St. David's Country Club, Wayne, Pa.

October 11, 1928.—The final tournament meet of the North Shore Plumbing and Heating Trade Golf Association of Chicago, to be held at the Nordic Country Club, Itasca, Ill.

October 15, 1928.—October meet of the Delaware Valley Trade Golf Association, at the Columbia Country Club, Washington, D. C.

October 18, 1928.—The October golf meet of the Plumbing Contractors' Association of Chicago, to be held at Cog Hill Golf Club.

October 19, 20 and 21, 1928.—The annual outing and monthly golf tournament of the San Francisco Plumbing and Heating Club, to be held at the Sonoma Mission Inn, Boyes Springs, Calif.

October 23, 1928.—The October meet of the Metropolitan Trade Golf Association, to be held at the Wykagyl Country Club, New Rochelle, N. Y.

October 31, 1928.—The regular meet of the Heating and Ventilating Golf Association of Philadelphia, to be held at the Pine Valley Country Club, Clementon, N. J.

November 10, 1928.—The fourth annual dinner and dance of the Jobbers' Credit Association, Inc., New York City, to be held at the Hotel Commodore.

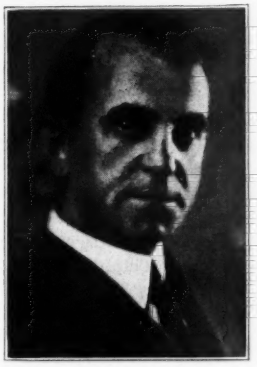
November 12, 1928.—The November meet of the Heating Trades Golf Association of Massachusetts, to be held at the Unicorn Country Club, Stoneham, Mass.

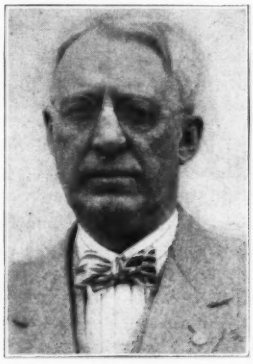
C. S. Armington, master plumber of Harvey, Ill., is completing his new quarters at 15337-39 Center avenue. Plans are made for an attractive showroom and a commodious office. A large two-story and basement building has been erected in the rear for a shop and storeroom.

THE TRADE

NEWS FOR PLUMBING AND HEATING CONTRACTORS

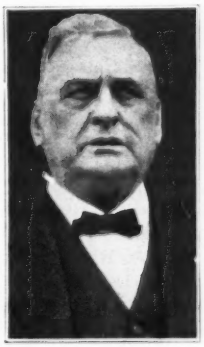
Below: Jere Sheehan, Jr. At right, Ed. L. Penfrase





At left: Alfred C. Eynon. Below: John A. Quinn

Names National Officers of Master Plumbers



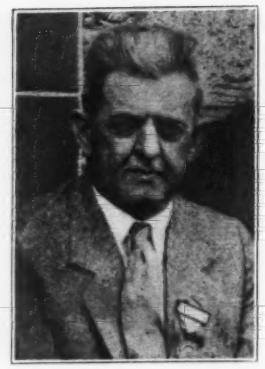
JERE SHEEHAN, JR., of St. Louis, Mo., president of the National Association of Master Plumbers, has just announced his selection of members to serve on the standing committees of the association. His choice of men to comprise the national board of directors will be announced in a few days. The committee members, chosen from among active business leaders throughout the country, are as follows:

Apprenticeship Committee — John J. Shanahan of Norfolk, Va.; Lewis R. Friend of Milwaukee, Wis.; J. Preston Perham of W. Roxbury, Boston, Mass.; Fred J. Praechter of St. Louis, Mo.; Louis I. Yauchzi of Rochester, N. Y.

Conference Committee—Frederick W. Quinter, chairman, Washington, D. C.; Frederick C. Kuetemeyer of Milwaukee, Wis.; Henry

Top: George H. Drake. Below: John J. Shanahan

Top: E. D. Hornbrook. Below: Frank J. Fee



Frank B. Lasette

Albert B. Dibble

Frederick W. Quinter

Thomas F. Nolan

E. Longley of Wilmington, N. C.; Jere L. Murphy of New York City; Richard J. Welch of Lowell, Mass.

Educational Committee—Albert B. Dibble, chairman, New Haven, Conn.; Alexander Coleman of San Francisco, Calif.; Robert E. Murphy of Chicago Ill.; Frank F. Schimpf of Albany, N. Y.; Harry L. Stevens of Hutchinson, Kans.

Scholarship Committee—Frank J. Fee, chairman, New York City; James S. Cassedy of Cambridge, Mass.; Thomas F. Nolan of Albany, N. Y.; John J. Vogelpohl of Cincinnati, Ohio; Samuel F. Wilson of Newark, N. J.

Standardization Committee—George H. Drake, chairman, Buffalo, N. Y.; Joseph Hayes of Indianapolis, Ind.; Edward B. Kleine of Cincinnati, Ohio; Jere L. Murphy of New York City; Albert J. Wilson of San Francisco, California.

Plumbing and Heating Industries' Committee—Thos. F. Nolan (Pres. July 1 to Dec. 31, 1928), Albany, N. Y.; Jere Sheehan, Jr. (Pres. Jan. 1 to June 30, 1929), St. Louis, Mo.; Alfred C. Eynon of Canton, Ohio; Edwin D. Hornbrook of Kansas City, Mo.; Frank B. Lasette of Long Island City, N. Y.; John A. Quinn of Philadelphia, Pa.

Heating and Piping Officers Meet

SIXTEEN SECRETARIES ATTEND CONFERENCE

Sixteen local associations of the Heating and Piping Contractors National Association were represented at a general conference of secretaries of that organization, held at the association's headquarters in New York City on September 17 and 18. The sessions were presided over by A. R. Herske, Cleveland, chairman of the secretaries' conference, and A. Bachman, Cincinnati, acted as secretary. In addition, there were present E. A. Dusossoit, Boston; Louis T. Braun, Chicago; George S. Clark, Detroit; Edward R. Harding, Greensboro, N. C.; George B. Richmond, Memphis, Tenn.; O. A. King, Milwaukee; M. E. Durkee, Newark, N. J.; C. F. De La Barre, Norfolk, Va.; M. G. Sellers, Philadelphia; J. B. Walker, Pittsburgh; B. Y. Kinzey, Richmond, Va.; W. E. Taylor, New York City, and C. N. Nichols, Washington, D. C. The general office was represented by Henry B. Gombers, Joseph C. Fitts and E. G. Byrd.

The secretaries attacked a program of work that included 36 subjects with many sub-headings under several. Two days were found not long enough to accomplish everything contained in the agenda, but it was found possible to discuss the following:

Preference for convention city; the establishment of credit bureaus, both association and wholesalers; boiler selection data; the heating department of the Plumbing and Heating Industries Bureau; activities of the association's field representative; the partial payment plan; controlled meetings; quantity surveys; the office manual, both its use and what shall next be proposed; depreciation; plan making; adequate sizes for boiler rooms and proper ventilation; uniform chimney ordinances and compulsory smoke tests; the training plan; national convention procedure at Philadelphia; the relation of local secretaries to the national association; modern merchandising methods on part of manufacturers; bidding to general contractors; operating statements of local associations; the value of budgeting; evaluating the services of a secretary; the handling of controversies; group insurance; combating questionable advertising in local papers; the Home Modernizing Bureau; certified heating, including national advertising, financing, checking plans, inspection, and the issuing of certificates; and legal advice for associations.

The discussions led to the passage of several resolutions, those being made public including one thanking the boiler output committee for its work, another okeying the field representative plan and endorsing the work of the present field representative, E. G. Byrd, and a third which expressed the belief that the national convention in Philadelphia was the best in the history of the national association. George M. Getschow of Chicago, chairman of the boiler output committee, appeared before the secretaries, giving a history of the work and explaining the use of the new boiler standards. S. Lewis Land, of the Plumbing and Heating Industries Bureau, also spoke, telling of the completion of the text book.

DULUTH PLUMBERS HAVE BOWLING TEAM

The bowling team of the Sanitary Service Co., plumbing and heating contractors with offices at 122 East Michigan street, Duluth, Minn., won two games out of three from its opponent, the Fitger Co. of Duluth. This victory took place during the second set of games played by teams of the Duluth Major League at the De Luxe bowling alleys.

Another honor was captured by the Sanitary Service Co. team when Fred Aura won the special weekly prize awarded by the league to the individual making the highest score. Aura's score was 630, the highest of any individual playing in any team that goes to make up the league.

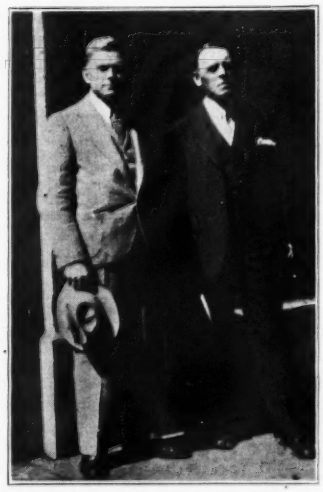
OHIO BOARD MAKES CONVENTION ARRANGEMENTS

The board of directors of the Ohio State Association of Master Plumbers held its regular mid-season meeting on Sunday, September 9, at the Mansfield-Leland Hotel, Mansfield, Ohio. Every member of the board was present at the meeting, and other out-of-town people included Charles W. Wilson of Youngstown, chairman, and H. S. Smith of Warren, both members of the publicity committee, and William Zernachel, president of the Canton association.

Plans were made for the forthcoming thirty-eighth annual convention of the association, which is to be held in Mansfield. February 5, 6 and 7, 1929, were the dates selected for the event, which will be held at the Mansfield-Leland Hotel. Homer V. Frye, president of the Mansfield association, Charles L. Arting, secretary-treasurer, and Charles Hoffman and W. E. Antrican, all of Mansfield, were in attendance to make suggestions for the convention plans.

PLUMBING AND HEATING CLUB HEAR SALES EXPERT

"Don't think the troubles of the plumbing and heating industry are peculiar to your industry alone," said Dr. Paul W. Ivey, nationally known sales counsellor and lecturer on sales methods for Northwestern and other universities, when he addressed the members of the Plumbing and Heating Club at their September 13 meeting held at the Palace Hotel, San Francisco.



Dr. Paul W. Ivey and H. W. Finch, president of the club

In response to the notice sent out by President Howard W. Finch, manager of Kohler Co.'s local branch, there were close to eighty executives and salesmen in attendance, representing every branch of the industry.

"During my experience working with selling organizations all over the country," Dr. Ivey continued, "I hear tales of acute competition, over-supply or inefficiency, and I can match in any other branch of trade anything you have to say relative to conditions in your industry." The speaker reassured his hearers when he stated that managers and salesmen everywhere are starting to think in terms of better sales methods.

With respect to the aggressive creation of business in the plumbing and heating field, the speaker said, "If I were selling service or supplies, and if the volume of new building were insufficient, I would go out and make a survey of my territory and actually create a demand for my goods by interesting the public in modernizing work. Remember, your industry will develop only in direct ratio to the development of its individual units, and you are those units."

Looking into the future of merchandising, Dr. Ivey pointed to the development of the chain store, the idea breaking into fields where it was least expected. "What kind of marketing methods will you have in the next ten years? If the existing outlets are not satisfactory, then

BURKS
SUPER-TURBINE
PUMPS
"Only one moving part"
— A LIFE-TIME OF SERVICE! —
Dealers: Send for No. 83 Bulletin!
DECATUR PUMP COMPANY
632 E. Cerro Gordo St., Decatur, Ill.

MOHAWK SEPTIC TANKS

A Real Protective Covering
On Mohawk Septic Tanks is a real protective covering that is not painted on but HOT DIPPED. This means it will last longer and do its work 100% better.

MOHAWK SEPTIC TANK CO. SCHENECTADY, N.Y.

SIMPLIFIED VAPOR HEAT

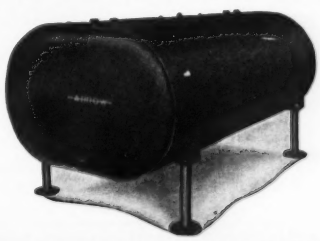
Big profits for you in our new, easy-to-install Vapor System. Few special fittings and no special training required for the work. Have first call on the vapor heating business in your vicinity. Full particulars on request.

Hutchison Regulator Sales Corporation
12 Lispenard Street New York
Our Catalog in

HUTCHISON SYSTEM

ARROW Underwriters' Labeled
UNCONDITIONALLY GUARANTEED
Fuel Oil Storage Tanks

Write for Prices



Ask For Bulletins B-208 and F-308

THE NOVELTY STEAM BOILER WORKS CO.
Clare and Kloman Streets Baltimore, Maryland

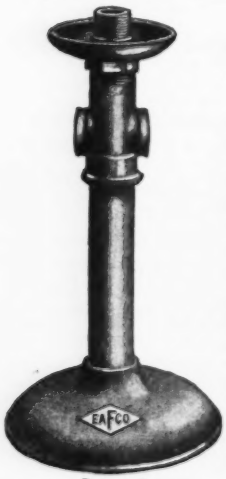
FLAGG

Malleable Fittings
Manufacturers
Since 1854

During all these years an institution has been developed that is large enough to execute orders satisfactorily yet small enough to give all orders personal attention.

STANLEY G. FLAGG & COMPANY, INC.
1421 CHESTNUT ST., PHILADELPHIA, PENNA.

"EAFCO" *Universal*



RANGE BOILER STAND

The "Eafco" Universal Range Boiler Stand made strong and simple as it is, really is a time saver. You need only a regular pipe nipple of the desired length to procure the height adjustment you want.

Be sure you get the genuine. Look for the name "Eafco" on the base.

Patented

THE EASTERN FOUNDRY COMPANY
Main Office and Factory: Boyertown, Penna.

Boston Office:
P. O. Box 63,
Cambridge, Mass.

Philadelphia Office:
940 Drexel Bldg.

New York Office:
50 Church Street

a different kind of distributing method will come into being."

Pointing to the trend in the direction of colors, whether applied to automobile bodies, household refrigerating machines, or plumbing fixtures, the speaker said in part, "Don't resist the customer. If he wants colors, get them for him. Don't attempt to run contrary to the pendulum. Swing with it. Follow the trend." In the plumbing and heating field, said Dr. Ivey, immense possibilities lie in the direction of house-to-house canvassing. "Let your salesmen be educators. The public needs educating. Every effort in this direction, whether through the spoken word or by means of advertising, is one step further toward a liberal education of the public."

Cecil W. Farrar, president of the Excelso Products Corp., Buffalo, N. Y., a West Coast visitor, was introduced by Albert J. Wilson, past president of the National Association of Master Plumbers. Mr. Farrar spoke briefly on salesmanship, stressing the idea of selling the home owner from the standpoint of comfort.

The club members are looking forward to their huge outing at Sonoma Mission Inn, Boyes Springs, set for October 19, 20 and 21. The committee, headed by Frank J. Klimm, has left nothing undone to provide entertainment for everyone—members, their wives and kiddies and guests—as there will be golf, horseback riding, tennis, croquet, motoring and swimming; there are also many points of historical interest nearby. A monster dinner-meeting will be held, featured by a program of interest.

PITTSBURGH CHAPTER TO INSPECT A. S. H. V. E. LABORATORY

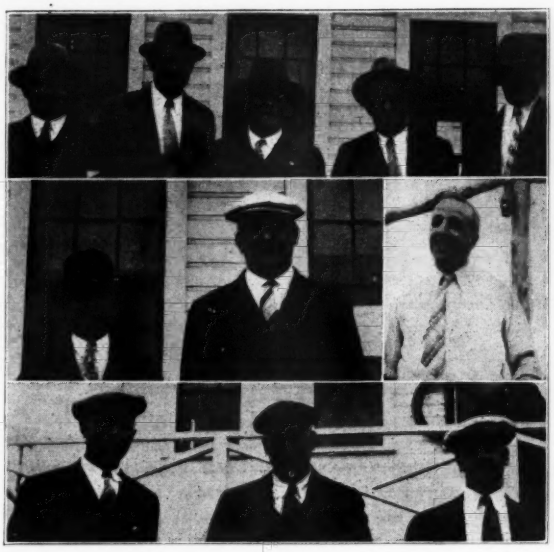
The Pittsburgh Chapter of the American Society of Heating and Ventilating Engineers will hold its first meeting of the fall on Monday, October 1. The meeting has been designated as the "Red Letter Day" of the chapter, and will be attended by several of the national officers. A tour of inspection will be made of the society's laboratory at the U. S. Bureau of Mines at 5 p. m., and will be followed by dinner at the William Penn Hotel at 6:30.

Among the out-of-town visitors for the occasion will be: Professor A. C. Willard, president of the national society; Thornton Lewis, vice president; L. A. Harding, second vice president; Samuel R. Lewis, chairman of the research committee; Alfred Kellogg, chairman of the boiler rating committee; D. S. Boyden, chairman of the committee on boiler load determination; W. H. Carrier, chairman of the heat transmission committee; W. V. A. Kemp, executive secretary, National Research Council.

RHODE ISLAND ASSOCIATION HOLDS FIRST OUTING

Lively interest was shown by all members and guests of the Rhode Island State Association of Master Plumbers, when they gathered 300 strong at Plum Beach Inn, R. I., to celebrate the first outing of the newly formed state association. The committee on arrangements did a good job, and John Drysdale, chairman, was kept busy every minute, and when he was not kept busy utilizing his megaphone making announcements and seeing that things in general ran off to perfection, he was introducing members to one another. Joseph Williams, treasurer of the new association, stuck faithfully to his desk at the entrance of the pavillion to see that all were checked up and made known. Other members of the committee on arrangements who are to be congratulated on their efforts are R. A. Renauld of Woonsocket, Fred Owen of Warren, Vice President Charles Murphy of Newport, Abe Mistofsky and H. E. Dumphney of Providence, James Hunt of Pawtucket, Frank Seymore of Warren and John Magee of Bristol, R. I.

All newly elected officers of the state association were

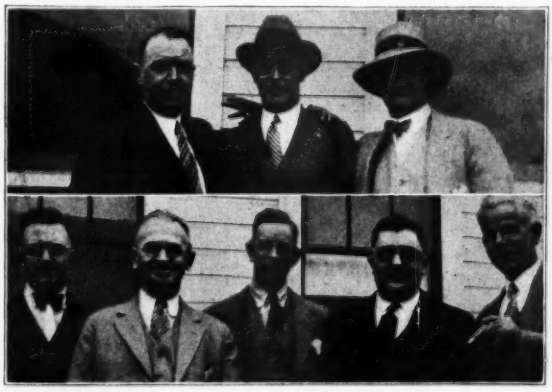


Top row: Abe Mistofsky of Providence, Charles F. Murphy of Newport, vice president of state association; Maurice P. Burnside of North Scituate, president; Joseph Williams of Providence, treasurer; Fred Owen of Warwick, R. I. Middle row: L. Tortdrice of Bristol, R. I.; J. Magee of Bristol, John Drysdale of Providence, chairman of outing committee. Bottom row: L. Stowell of Marion, Mass.; Mark Greenleaf of New Bedford, Richard Thatcher of New Bedford, vice president of Massachusetts Master Plumbers' Association.—Photos taken at the outing of the Rhode Island Master Plumbers' Association

present, headed by President Maurice P. Burnside of North Scituate, Vice President Charles T. Murphy of Newport, Joseph Williams of Providence, treasurer; John Magee of Bristol, clerk. Among the invited guests from out of the state were R. T. Thatcher, vice president of the Massachusetts State Association of Master Plumbers, and Mark E. Greenleaf of New Bedford.

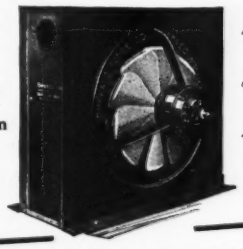
The morning was utilized by a ball game between the master plumbers and wholesalers, and the master plumbers were victorious with a score of 11 to 3.

At noon a luncheon was served in the Inn Annex, and immediately following more sports were run off. Harry



Top row: William Evans, of L. H. Tillinghast Supply Co., Providence; Tom Douglas, Providence; George E. Phillips, of Phillips Lead & Supply Company, Providence. Bottom row: O. E. Johnson, E. V. Reardon of Hirschfield & Mayer Co., R. L. Hinman of Crane Co., E. M. Sharpe, manager, Providence branch of Crane Co., E. H. Beede of Rhode Island Supply & Sprinkler Co.—Photos taken at the outing of the Rhode Island Master Plumbers' Association

"Buffalo" Breezo-Fin Unit Heater



Easy to install

Saves floor space

Low operating costs

REGULATED HEAT
when and where you want it

Higher efficiency, lower cost, simpler construction and easier installation are only a few of the many outstanding advantages found in a "Buffalo" Breezo-Fin Unit.

Now is the time to carefully consider the most suitable heating system for you to use. A copy of our free catalog No. 467 will help you to select the proper one.

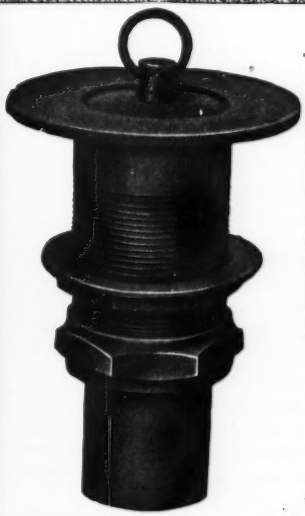
Buffalo

Forced and Induced Draft Fans—Ventilating Fans—Air Washers, Humidifiers, Dehumidifiers—Blowers and Exhausters—Unit Heaters, All Types—Driers and Special Fan Applications—Multistage Pressure Blowers—Punches, Shears, Bar cutters, Bending Machines—Drilling Machines—Forges

AIR ENGINEERS FOR FIFTY YEARS

BUFFALO FORGE CO.
483 Broadway Buffalo, N. Y.
In Canada—Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

ASK YOUR JOBBER



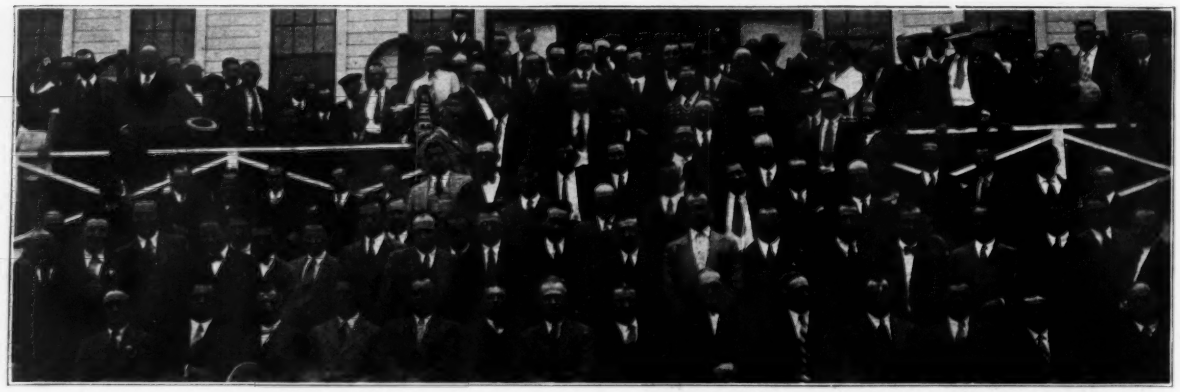
Ask your jobber to show you the complete Trenton Line. See that he is in a position to supply you all the time.

He sells hundreds of products, yet you will find he has no better word for any of them than he has for Trenton.

Get our complete catalog.

The Trenton Brass and Machine Co.
Trenton :: N. J.

Represented by Rollin C. Wilson
7 E. 42nd St., New York, N. Y.
261 Franklin St., Boston, Mass.
121 N. Broad St., Philadelphia, Pa.



Photograph of members and guests attending the Rhode Island master plumbers' outing

Hardman of Phillips Lead Supply Co., Providence, had his hands full overseeing this end of the program. The 100-yard dash was won by James Fallon of the Phillips Lead Supply Co., and he received silver cuff links as his prize. V. McKinigan won second and B. Dwyer third. James Fallon and Frank Knight were the victors in the three-legged race and they received silver cuff links. E. Sheehan and Arthur Holt also ran, but were contented with second place. The potato race was won by Frank J. Coughlin, who received silver cuff links, B. Dwyer coming in second. There were 50 other prize winners, the lucky ones receiving various prizes, such as floor lamps, wrist watches, clocks, sets of sterling silver ware, pen and pencil sets, etc.

At 6:30, 300 sat down to one of Rhode Island's finest lobster and chicken dinners. John Drysdale, toastmaster, introduced President Maurice P. Burnside as principal speaker. President Burnside expressed his hope that the great interest already shown by association members would increase, and stated it was time now for every member to take down the gauntlets and get new members.

Bureau Established in New Offices

The following announcement was received recently from the Plumbing and Heating Industries Bureau:

"The Plumbing and Heating Industries Bureau is now located in its permanent headquarters in Chicago. The address to which all correspondence with the bureau should now be directed is: Plumbing and Heating Industries Bureau, Pure Oil Building, 35 East Wacker Drive, Chicago, Ill.

"All of the office equipment of the bureau, including desks, filing equipment, records and service material, was moved from Evansville to Chicago with little interruption in the work of the bureau. All of the details of moving were carefully planned weeks in advance. Equipment was moved in sections in order that part of the bureau staff might function in the old offices in Evansville, while the rest of the staff was arranging the equipment in Chicago.

"The bureau occupies 4,187 square feet in the Pure Oil building, which is one of the newest and most modern of business buildings in Chicago. In setting and design it has established a new standard for beauty among American skyscrapers. It rises forty stories above a beautiful plaza adjoining the junction of Michigan boulevard and Wacker drive.

The Pure Oil Building, Chicago, into which the Plumbing and Heating Industries Bureau recently moved its headquarters

"The location of the bureau on Wacker drive is of special interest in connection with the modernizing campaign fostered by the bureau. Wacker drive is a new, double-deck thoroughfare that was made by tearing down old buildings and widening a street along the south side of the Chicago River.

"Because it is on the edge of the loop and away from traffic congestion, this street has been selected as the site for the new Civic Opera House and is destined to become one of the best known streets in America.

"The Pure Oil building was chosen as the permanent headquarters of the bureau after a careful survey of the available space in Chicago. Final decision was made by a committee appointed by the executive committee of the board of directors. The committee consisted of W. K. Glen, chairman, William Scudder, Louis Braun, Thomas Hanley, Sr., and Russell G. Creviston.

"A lease for ten years with a cancellation privilege in five years was taken on the space.

"The bureau was moved to Chicago in accordance with the vote of the board of directors at their mid-year meeting in Memphis, following the adjournment of the annual convention of the National Association of Master Plumbers.

"From a small beginning in one office in Evansville, where it was started in June, 1919, with a budget of $36,918 for the year, the bureau has expanded until today it is one of the largest of national trade associations, and has a budget of more than $400,000. The bureau is unique among trade associations in that it is composed of all branches of two industries. The moving of the bureau to Chicago is part of the strategy of its aggressive campaign for a larger market for plumbing and heating products. Located in Chicago, with the wealth of information and services that a great city offers, with branch offices east and west, the bureau will be able to more effectively challenge other industries for market supremacy."

RAIN DETERS NORTH SHORE OUTING

Eighty-five members and guests of the North Shore Master Plumbers' Association gathered recently at Fairview Inn, Ipswich, Mass., for their annual frolic. There were members and guests gathered from Salem, Lynn, Beverley, Danvers and Peabody, Mass.

Unfortunately, rainy weather marred the activities of the day. The committee in charge had an unusually fine program arranged, but all their efforts went to waste. A few contests were held in the dining hall of the inn. Moe Hirschfield of Hirschfield & Mayer Co., received a jackknife for winning the putting contest, and John Mullaney of Kohler Co., received a key container as second prize. The bowling contest was won by Leon Graves of the American Radiator Co., and he received a flashlight. A. T. Teague of Beverley received a key container as second prize, and John Scott of Manchester received a pack of playing cards for third prize.

A flashlight was given as first prize in the grip contest, and William B. Weis, manager of the Boston branch of the Standard Sanitary Mfg. Co., carried it away. M. Ahern of Hoffman Heater Co. received a key container as second prize. The ring tossing contest was won by Elmer Stack, consulting engineer for states of Maine and Massachusetts, and he too received a knife. A key container was won by Harry Buckley, of Carpenter & Patterson, for second prize. H. Guy Lyman of Beverley won the nail driving contest and received a valve, while M. Dan Reardon of Standard Plumbing Supply Co. received a pack of playing cards as second prize.

Inasmuch as weather conditions forbade running the athletic events, the committee in charge of arrangements, which was composed of Joseph H. Trow of Salem, secretary, Robert Robertson, Jr., of Beverley, J. P. Murphy of Beverley, D. A. Wentzell of Peabody, George Woodbury of Peabody, and Henry Lard of Peabody, are certainly to be

Top row: G. K. Richmond, R. H. Nelson, L. F. Nordine, A. Spoodis, F. Tyler, of Herman Nelson Corp., Moline, Ill. Middle row: B. D. Johnston, and R. E. Larson, sales manager, both of Wolverine Brass Works, Grand Rapids, Mich.; Leo Mayer, of Josam Mfg. Co. Bottom row: Wm. Hunt, B. A. Hungerford, F. T. Horn, O. A. Meyers, all of Duro Co., Dayton, Ohio. Photos taken at the recent convention of the Illinois Master Plumbers' Association

Month after month home and prospective homeowners read about the Caloroil Line of Oil Burners thru magazines, newspapers, billboards and direct advertising.

The
MILLIONAIRE On the Hill
and the
MOTORMAN In the Valley

Who is going to sell them both?

BEING human, both want the modern comfort of oil heat . . . and before many years *they will get it.* Manufacturers of *one type* of burner—"take it or leave it"—simply *can't* crowd the same model on every prospect. Logic is against it, buying habit is against it and *human nature* is against it.

Don't try. Don't attempt to sell the same burner to the bulky mansion and the modest bungalow. *No longer is that necessary.*

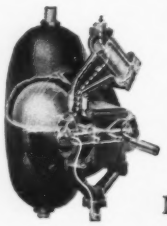
Fit the burner to the house, not the house to the burner. A burner for every home and every purse. That sums up the revolutionary step taken by Caloroil in reaching out after every possible sale, in developing the *whole* market.

Dealers who participate in this program are finding their sales effort more productive and profitable.

Write for details, prices and territorial arrangements. *This new policy is attracting the strongest dealers in every community, men who think fast and act promptly. They know profit-possibilities when they see them.*

Caloroil
BURNER CORPORATION
225 West 34th Street, New York City
260 Tremont Street, Boston

A stitch in time



An ounce of McDonnell & Miller prevention is usually worth about 100 pounds of replaced boiler sections say nothing of labor costs. Let us send bulletin describing the *only self-cleaning Duplex Feeder.*

McDONNELL & MILLER
400 N. Michigan Ave., Chicago

Self-Cleaning Duplex Feeder

Electric SUMP PUMPS

for
Draining Cellars.
Wide range of capacities.
Quality Construction.
Conservative Ratings.
WRITE for BULLETIN

TABER
Pump Co., Buffalo, N.Y.

TANKS

PRESSURE SPECIAL
BLACK & GALVANIZED
RIVETED & WELDED

PENNA. RANGE BOILER CO.
24th and Washington Ave., PHILADELPHIA

All Lead-Copper-Galvanized Iron

SIMPLEX AND JUNIOR FLASHINGS FOR EVERY ROOF CAN BE HAD IN EACH OF THE ABOVE METALS.

Write for prices and full information on the easily installed, durable SIMPLEX and JUNIOR Flashings.

SIMPLEX MFG. CO.
2644 N. Ashland Avenue
Chicago, Illinois

"Junior Flashings"

congratulated on the program arranged, as there were entertainment features for everyone.

All officers of the North Shore association were present. headed by President George Woodbury of Peabody and James H. Trow, secretary of the Salem association, and President J. P. Murphy of Beverley and Secretary Robert Robertson, Jr., of Beverley.

Among the invited guests were: J. G. Gillespie, president of the state association; Wallace T. Wordell of Taunton, executive secretary of the state association; J. Preston Perham, commissioner of vocational training in Massachusetts; Elmer Stack, consulting engineer for states of Maine and Massachusetts; Ralph Ober, journeyman plumber from Salem.

Following the indoor sports, a lobster and chicken dinner was served, and President George Woodbury, acting as toastmaster, introduced J. G. Gillespie. Mr. Gillespie extended to all the best wishes of the Massachusetts state association, and outlined briefly what good work the state association is doing and appealed to all members of each individual association to hook up with the state association and co-operate with them to make their work a success. He touched briefly on what the committee appointed by the state association and headed by George Ryan of Lynn, James H. Trow of Salem and A. H. Wardle of Fall River, is doing in conjunction with the consulting engineer, Elmer Stack, in promoting safety in domestic hot water installations in the homes.

State Executive Secretary Wallace T. Wordell of Taunton spoke next. He expressed his feelings that for the benefit of wholesalers present he wished they would appoint a committee to meet with the master plumbers to discuss questions of importance. J. Preston Perham expressed his appreciation at being present at the gathering. Eugene Harnois, president of Lynn Master Plumbers Association, also brought the greetings of his association.

BOXING BOUT CLOSES EASTERN LONG ISLAND OUTING

Nearly 100 persons turned out for the third annual outing of the Eastern Long Island Master Plumbers and Steam Fitters Association, held at the Jones' Casino, Peconic Bay, near Southampton, Long Island, Saturday, September 8. The committee, which was made up of Carl Martin, Southampton, Charles Lloyd, East Hampton, and W. R. Lucas, of Riverhead, had arranged for an afternoon of bathing, boating, sports and athletic contests.

The tug-of-war between the salesmen and master plumbers was the feature of the games, the salesmen winning and getting a box of cigars for their prowess. The first race was the potato race for men, Harold Thompson, of the Oster Mfg. Co., getting the first call on the box of solvent. The ladies also tried a potato race, Miss Tuthill earning a heat control apparatus.

A guest from the South Shore Master Plumbers Association, Mrs. William Metcalf of Rockville Center, proved the fleetest among the women in the 50-yard race, earning a box of chocolates, and Mrs. L. Dohm won a shower bath for her speed in the stout ladies' race. The shoe race provided much merriment, Gordon MacNish accomplishing the difficult feat first and taking a dozen air valves.

At dinner in the evening, Mr. Thompson served as toastmaster, and short talks were made by Mr. Vreeland, President Sanford, and several visiting masters. Following the dinner a boxing contest was held, the main event being a three-round battle between "Kid" Alex Cameron and "Pug" Church of John Meade's staff. The decision was given to former President Cameron. Then a pleasant two hours spent in dancing closed and crowned a successful day.

Woman's Page

At this time of the year, schools have resumed their work, vacations are mostly over, and women's clubs and organizations of all kinds are also entering upon a new season. So with the women's auxiliaries to the master plumbers' associations, those which have not already resumed meetings in September are planning to commence their regular activities in October. Members who have recently returned from their summer vacations will be interested in learning of their organizations' plans for the fall. Other women eligible for membership who have not yet joined will be particularly interested in reading of the activities arranged for the autumn season. Secretaries of the women's auxiliaries can further this interest by sending in, for publication on this page, news of meetings held and to be held, as well as outlines of plans for the future.

≈≈≈≈≈≈≈≈≈≈

Denver Auxiliary Holds First Fall Meeting

The Ladies' Auxiliary to the Master Plumbers' Association of Denver, Colo., met at the home of Mrs. F. Hanlin, on Thursday, September 13. A delicious luncheon was served at one o'clock to eighteen members and one guest. The regular meeting was called to order by the president, after which whist was played and enjoyed by all. This was the first meeting after the summer vacation, and everyone was very glad to meet again. The illness of Mrs. John Hensler, who was unable to be present, was regretted by all.

Los Angeles Auxiliary Holds Picnic

The Women's Auxiliary of Los Angeles, Calif., held a most enjoyable basket picnic last month at the Exposition Park. The swimming pool proved the main attraction, and the children took advantage of the diversions of the playground as well. Everyone enjoyed the bounteous luncheon served from the well-filled baskets. Ice cream and cake were served by the committee to all who wished. Another outdoor affair was held at Anaheim Landing. The auxiliary also held a regular monthly meeting and luncheon on September 11, and a dinner on September 13.

South Side Ladies Hold First Fall Meeting

On Thursday afternoon, September 6, the South Side Master Plumbers' Women's Auxiliary of Chicago held its first meeting of the fall season at the Broadview Hotel. Following a very nice luncheon at which thirty ladies were present, a short business session was held, during which session it was decided to change that section of the by-laws pertaining to the election of officers. It was suggested that the officers be elected after the state convention rather than preceding it. The by-laws now state that the election is to be held in February instead of December, as at present. It was also decided to hold a number of card parties during the year. The hostesses were Mesdames W. G. Compton, J. H. Kalaher, W. H. Ritter, W. C. Shaw.

More than fifty ladies were present at the first of the card parties of this auxiliary, which was held on the afternoon of Wednesday, September 12, at the Club Casa del Mar, at Seventy-fourth street and South Shore Drive. This number was somewhat larger than had been expected. Mrs. George Feldkamp won a beautiful salad set, in addition to the prizes which were awarded to the high score at each table.

Charter Member of N. A. M. P. Writes National Auxiliary

Alex W. Murray, formerly of Chicago and now living in Twin Falls, Idaho, one of the two living charter members of the National Association of Master Plumbers, was asked to speak before the Memphis convention of the national auxiliary. Mr. Murray was unable to be present, but wrote the letter below to express his appreciation for the honor.

My Kind Friends:

I do not know how to appropriately express my thanks for the honor tendered me by the Woman's Auxiliary, and regret that my physical and mental condition unfits me to address your convention.

It is indeed a great honor to have a Woman's Auxiliary Scholarship named for me. Let me hope that the lucky young man who will be able to learn the science of plumbing through this gift will ever be loyal to the tenets of, and grateful to, the Woman's Auxiliary.

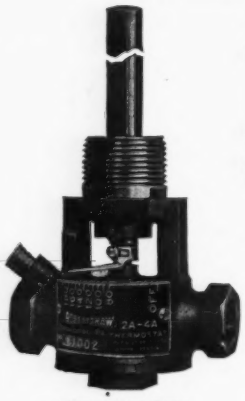
My young friend, Peter M. Munn of Chicago, has proven his friendship by consenting to represent me at the State Presidents' Banquet; but I have not yet mentioned this additional honor—but will do so tomorrow; am a trifle

Top row: Mesdames H. P. Wilson, Jackson Noble and Emile Heymans, of San Francisco. Bottom row: Mrs. Robert Lees, San Francisco; Mrs. L. Z. Brown and Mrs. Frank Stokes of Los Angeles; Mrs. Frank J. Klimm, San Francisco. Photos taken at a recent golf tournament of the San Francisco Master Plumbers' Association

Every Plumber Should Know About the Various Types of

ROBERTSHAW

Thermostats



Throttling Type

Throttling Type

For Side Arm Water Heaters
or
Automatic Storage Water Heaters
All sizes from ⅜ to 2 inches

Robertshaw Throttling Type Water Heater Thermostats are fully covered in

CIRCULAR FORM R-4
Write for it!

Snap-Action Type

For Storage Water Heaters
and
Furnace and Boiler Temperature Control. Gas Pipe sizes from ½ to 2½ inches

Robertshaw Snap-Action Thermostats are illustrated and described in

CIRCULAR FORM R-1
Write for it!

Snap-Action Type

Room Temperature Control

Room Temperature Control

Entirely Gas operated
Non Electric—No Volatile Liquids
Easily Installed
Attractive in appearance
Will control the Room Temperature within a range of 1½ degrees plus or minus

Robertshaw Room Temperature Thermostats are fully described in

CIRCULAR FORM R-3
Write for it!

Any or all of the Above Circulars are yours for the Asking.

ROBERTSHAW THERMOSTAT CO.
YOUNGWOOD, PA.

doubtful about trusting him among the many beautiful ladies that will be present.

I hope the trip will be safe and enjoyable, and the proceedings of the woman's convention will be a memorable page in the history of the N. A. M. P.

Yours in friendship,
(Signed) Alex W. Murray,
Twin Falls, Idaho.

BRONX MASTERS PICNIC AT CITY ISLAND

The annual outing of the Bronx branch, Association of Master Plumbers of the City of New York, was held at the Colonial Inn, City Island, on Wednesday, September 12, a fine crowd turning out for the affair. The committee, headed by F. Schmalstich, with S. George Arnone as secretary, was made up of W. F. Ebner, A. Beyrodt, L. Guerr, C. W. Kirchhof, A. Platt and T. W. Mullins, and had made arrangements for a good time for men, women and children.

City Island is not far for most of the members of the association, and it was early when the crowd gathered to take part in the proceedings. At the Inn they were met by Mr. Arnone, who was checking breakfast tickets, then posed for a group photograph before the committee started the athletic events.

The first of the games was the 100-yard dash, won by Frank Kiesel, of the Bronx water department. Then

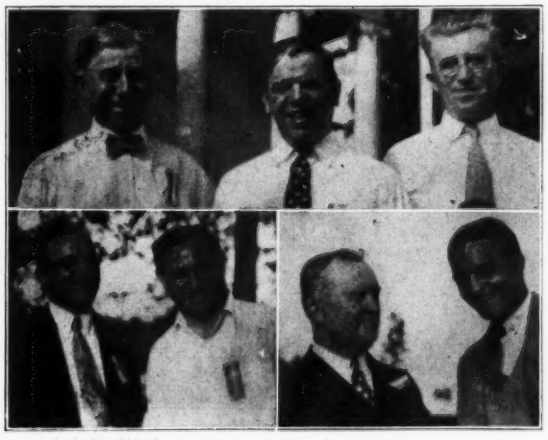
Top picture: L. J. Carson, Tremont Plumbers Supplies; W. Mittleman of Cohoes Rolling Mill Co. Middle picture: Edward Schwartz, president of E. Schwartz Plumbing Supply Co.; Charles E. Little of E. Schwartz Plumbing Supply Co. Bottom picture, back row: Frank Habeck, D. L. Delaney and Fred Riehm. Front row: James Leslie, J. Drunstadter, William Conlin, Oil City Boiler Works. Photos taken at the outing of the Bronx Master Plumbers' Association

Top row: H. L. Chute, A. M. Byers Co.; Lawrence J. Redmond, secretary of Queens association; H. Gustafson. Bottom row: Mrs. Harry Sugarman and Mrs. Lawrence J. Redmond. Photos taken at the outing of the Bronx Master Plumbers' Association

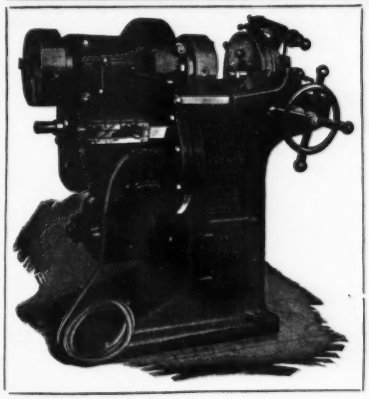
Kiesel scored again, this time in company with Jerry Edwards, Sloan Valve Co., in the three-legged race, each of the winners receiving a bill fold. So many entrants gathered for the sack race that it had to be run off in heats, H. W. Levin, Hudson Brass Co., taking the first, and George Wolfe, L. S. Neumann Co., the second. In the final, Mr. Wolfe proved his superiority at this mode of locomotion.

The ladies were invited to enter a peanut race, this also being run in heats, won by Rose Reiff, Mrs. Stephen Welch, wife of the past state president, and Mrs. Philip Rose. The final was taken by Mrs. Rose, and the committee turned its attention to the potato race for women. Here Rose Reiff avenged her defeat in the earlier event by taking first prize. Mrs. Rose was given a handbag and Miss Reiff a manicure set.

A special event, open to master plumbers only, was a



Top row: Charles W. Kirchhof, George Arnone, secretary; Fred Schmalstich, chairman of entertainment committee. Bottom row: William F. Weber, of Ideal Sales Co., president of National Association of Plumbing and Heating Salesmen; Britt Cohn, United Plumbers Supply Co., Inc.; H. Kenning, C. A. Falk, both of W. A. Case & Son Mfg. Co. Photos taken at the outing of the Bronx Master Plumbers' Association



"CHICAGO" No. 2
Power Pipe Threading Machine

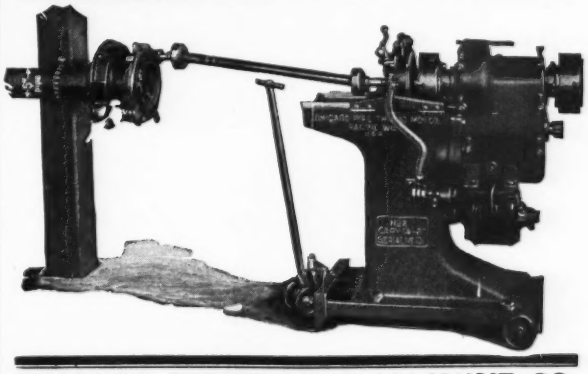
For Production and Precision Threading

PORTABLE

Capacity ¼" to 2" Pipe
" ½" to 1½" Bolt

FEATURING:
1. Quick Die Change
2. Automatic Die Head
3. Three Speeds
4. Perfected Oil Control

Send for Catalog.



CHICAGO PIPETHREAD MACHINE CO.
Office and Factory: 1615 Racine St., RACINE, WIS. U. S. A.

Our Catalog

ENTERPRISE
BRASS PRODUCTS

Ask the plumber who uses Enterprise Brass Goods or ask your jobber to show you the Enterprise line. If you do this, you can see for yourself just what has taken place in their manufacture.

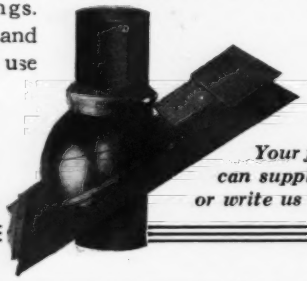
But the best way to know just how well Enterprise material stands up under the severest service is to install it.

EBW

Enterprise Brass Works
Muskegon, Michigan

Bullard Flashings

A tight fit on any roof, from flat to half pitch, is the only thing you can obtain when you use Bullard Roof Flashings. Try them once and you'll always use them.



Bullard Specialty Co.
Tiffin Ohio

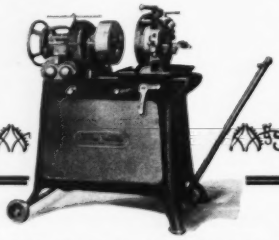
Your jobber can supply you or write us direct

RED-E-HALL
PORTABLE PIPE THREADER

AS EASY TO OWN AS IT IS TO USE

Our deferred payment plan puts the Red-E-Hall within your easy reach. Owning it and using it are equally easy. Let us tell you all about it.

For the good of your business



Write for details

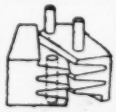
HALL-WILL, Inc., Erie, Pa. *Pacific Coast Office:* 717 Calmar Ave., Oakland, Ca.

You'll only have to install one Built-Well Seat to know why they're "ace-high" with plumbers and users everywhere.

Order them from your jobber

Look at Construction

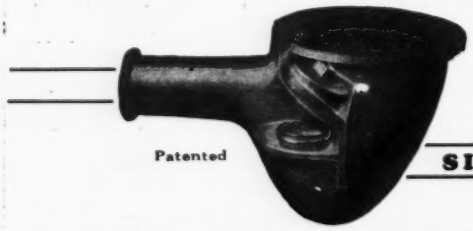
The Built-Well V-Lock Joint



Patented

Sectional view of joint, turned upside down to show how dowels are inserted from bottom. Moisture only makes them tighter.

Built-Well Mfg. Co. 300 N. Robey Street Chicago, Illinois



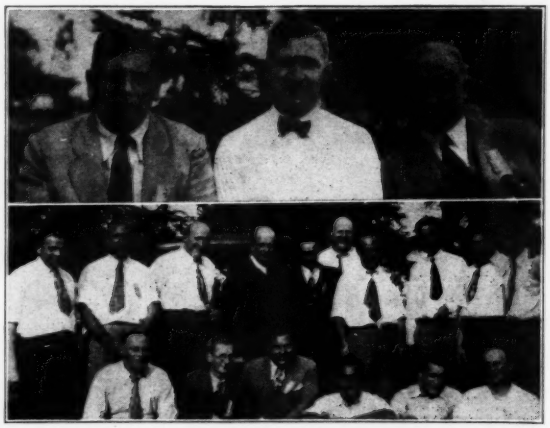
Patented

SIGNET

Positive elimination of all gas, sewage and resultant germs from the homes and buildings of your customers is assured when you install Signet Floor Drains.

Order them from your jobber

CRAMPTON-FARLEY BRASS CO.
Kansas City :: :: Missouri



Top picture: Jacob Stockinger, president of Queens association; Harry Sugarman, president of Bronx association; T. P. McLoughlin, past president of Manhattan association. Bottom picture: Group of Bronx master plumbers at their annual outing

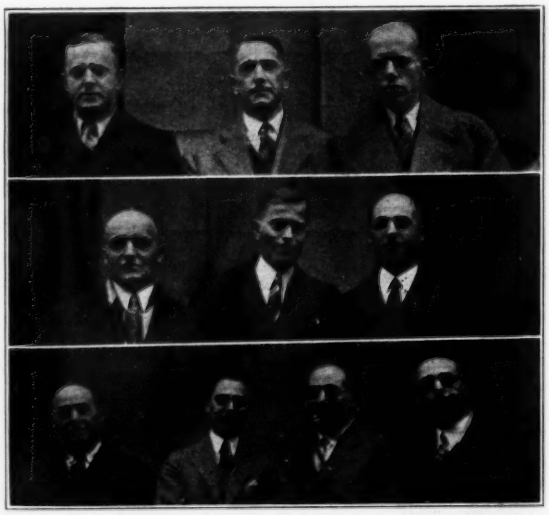
pipe threading contest, staged by the United Plumbers' Supply Co., Inc. Fred Villick won a chromium plated combination faucet for his speed, while Alex Beckerman, who was second, was given a Stillson wrench.

Before darkness fell, the company was gathered in a huge tent on the grounds, where a delicious shore dinner was served.

CHICAGO OIL BURNER ASSOCIATION MEETS

The regular monthly meeting of the Chicago Oil Burner Association was held on Tuesday, September 11, at the Allerton Club. Forty-five members and guests were in attendance.

R. S. Beale, national sales director for Electrol, Inc., of Missouri, gave an address on "Trade Practice and Ethics," and Homer J. Buckley of Buckley, Dement & Co. gave a talk on sales, and association activities.



Top row: A. M. Bains, A. L. Mendenhall, R. B. Baird, all of Duro Co.—Middle row: C. L. Ferree, C. R. Smock, A. J. Reinhart, all of Duro Co.—Bottom row: Al. Neuman, W. J. Oberndorf, Samuel Davis, all of United-Oberndorf Co.; Arthur L. Abt, Sterling Brass Co.—Photos taken at the recent convention of the Ohio Master Plumbers' Association

TEACHER'S GUIDE

A mountain school teacher corrected a boy who had said, "I ain't gwine thar."

"That's no way to talk. Listen:

"I am not going there; thou art not going there; he is not going there; we are not going there; you are not going there; they are not going there. Do you get the idea?"

"Yessur. They ain't nobody gwine!"

A MILLION MILES MORE OR LESS

A negro employee was being questioned during an investigation after a trespasser had been killed when he fell from a moving freight train.

"Did you see the man on the train?"

"Yes, suh."

"Where was he?"

"'Bout thuty cars back f'om de enjine."

"Where were you?"

"On de back end of de tendah of de enjine."

"What time of night was it?"

"'Bout leben o'clock."

"Do you mean to tell me that you saw that man thirty cars' length away at eleven o'clock at night?"

"Yes, suh."

"How far do you think you can see at night?"

"'Bout a million miles, I reckon. How fah is it to de moon?"

"Alice worships her husband, doesn't she?"
"Well, she places burnt offerings before him three times a day."

TOLERANCE

We are all prone to misunderstand the other fellow's customs. A story is told of two Irishmen who had just laid a wreath of flowers on a comrade's grave. While leaving the cemetery they saw a Jap lay some rice on the grave of a countryman.

"One of the Irishmen asked, "Whin do you expect your friend to come to life an' eat the rice?"

"When your friend come to smell the flowers."

BOSTON TRANSCRIPT.

A LEAF FROM A PERSONAL EXPENSE BOOK

July	2—Adv. for girl stenographer	$ .50
	5—Violets for new sten	.75
	7—Week's sal. for sten	15.00
	10—Roses for sten	3.00
	14—Week's sal. for sten	20.00
	14—Candy for wife over Sunday	.75
	18—Lunch for Miss Smith	7.50
	21—Violet's salary	25.00
	24—Theater and supper with Violet	22.00
	25—Fur. coat for wife	625.00
	27—Adv. for male stenographer	.50

You can't injure your enemy by hating him, but you can play the very devil with your own liver.

A California newspaper printed this item: "After the ceremony, Smith declared, he visited his father-in-law, Daniel Roney's house; whereupon his mother-in-law hit him over the nose, drawing blood, and his father-in-law fired at him twice with a shotgun. The police believe the Roneys objected to the match."

Once these police get to deducting things, it's surprising the amount of intelligence they show.

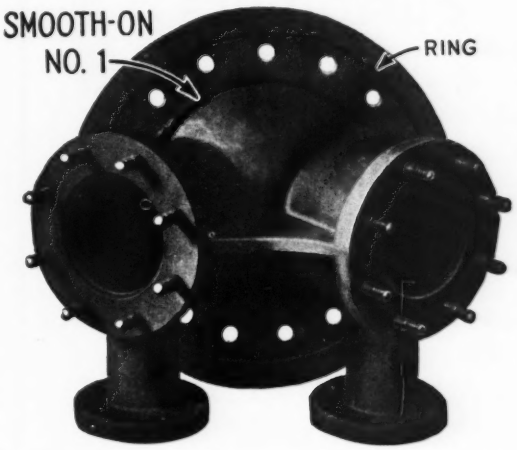
Here's an Australian number:

Salesman: How did you come to have an accident with the used car we sold you?

Buyer: I couldn't put my hand out when I was pushing it around a corner.

It's too bad radio announcers aren't using an older phrase at the end of the day's program—"Swearing off." L Y T.

This clever repair, made in Australia, avoided very heavy loss

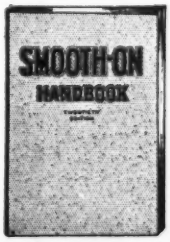


THE back cover of a 60-ton horizontal steam-driven 15-in. x 22-in. ammonia compressor cracked and put the compressor out of commission. The crack crossed one of the bolt holes, extended up to the edge of an outlet, 4 inches from the rim, and around the raised center of the cover about 8 inches.

A quick repair was made by filling the crack with SMOOTH-ON No. 1 and shrinking a steel ring around the edge of the cover. Expansion of SMOOTH-ON in the crack and contraction from the ring made the break doubly tight. The SMOOTH-ON repair was still tight 18 months afterward.

The Engineer who made this repair also reports excellent success with SMOOTH-ON No. 1 applied to scored and pitted flange faces that had previously developed bad leakage in high-pressure steam lines.

Get SMOOTH-ON No. 1 in 1 or 5-lb. can or 25, 50 or 100-lb. keg from your nearest dealer or if necessary from us direct.



This Book FREE if you return the coupon

Twentieth Edition—136 pages of data—193 diagrams, pictures and practical hints on at least 200 different uses for SMOOTH-ON. Every progressive engineer should have this book—get your copy NOW.

Do it with SMOOTH-ON

SMOOTH-ON MFG. CO.
DEPT. 12, 570 COMMUNIPAW AVE.,
JERSEY CITY, N. J.

Please send copy of the SMOOTH-ON Handbook Twentieth Edition.

NAME.....

ADDRESS.....

.....

9-29-28

customers

installing
a drain line
of ordinary pipe
for acid waste is
what puts the
"cus" in customer

the acid soon
eats thru the
pipe—then
leaks—repairs
and a mess

install Duriron
acid-proof
drain pipe and
the job is
done once
and for all

and a better
profit for the
Plumber makes
Duriron
interesting

Duriron is made
only by
The Duriron
Company
Dayton
Ohio

Bath a Day Movement

Inquiries continue to come in from school teachers who are looking for material to use in teaching health classes. Because "The Story of the Bath" so well fills this need, we have many hundreds of inquiries in the course of the school year. Immediately upon receiving such an inquiry, we send one copy of "The Story of the Bath" to the teacher making the request and refer the inquiry to the local association if there is one, or to the state association if there is no local. Each week we will list here the names of the inquiries uncared for. Individual master plumbers may, of course, take up such inquiries in their cities. Just write us if the name of a teacher in your city appears below:

167

LILA STUTTS,
Childersburg, Ala.
C. PASSOW,
782 East 175th St.,
Bronx, New York, N. Y.
ALICE BOWER,
Rawson, Ohio.
MARGARET COSEO,
Box 116, DeGraff, Ohio.
RETTA SHEPHARD,
Dodge School,
Bloomington, Wis.
C. S. SAMS,
R. F. D. 2,
Bluff City, Tenn.

Either associations or individual master plumbers may get in touch with these teachers and see what they need in the way of health material. Then write us for information as to how to put the Bath a Day Movement before these schools.

A letter from the Pennsylvania State Association of Master Plumbers indicates that prompt action has been taken in reference to inquiry from Miss Dolores Berdler.

Distribution of the booklet, and the use of the other Bath a Day material has been of great benefit to alert master plumbers. The recent feature section telling of the use of this material gave a good idea of how a plumbing contractor may benefit by such educational methods—as experienced by men in the industry.

Write us for full particulars.

Epigrams—For Your Use

Some men make more noise doing one day's work than others make in a lifetime.

* * *

Why would we rather win a dollar on a horse race than earn five dollars by working?

* * *

There's nothing like leather, unless it's Welsh rarebit.

* * *

The man who is not afraid of responsibility usually finds it in company with opportunity.

* * *

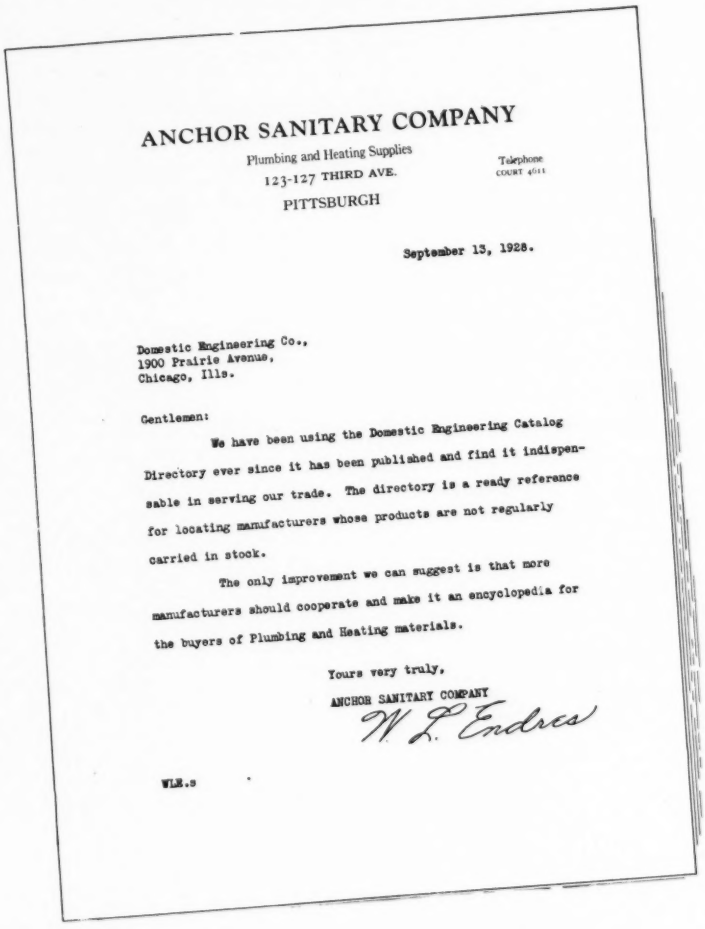
There's many an argument going on where homes are divided politically.

* * *

The worm turns. Yes, he turns over his pay envelope.

Encouraging reports are received from the bedside of John F. Rogers, of the Queensborough branch, Association of Master Plumbers of the City of New York, and one of the best known and best liked master plumbers in the national association. Mr. Rogers, who was stricken with paralysis of the throat, with complications, immediately following the convention of the National Association of Master Plumbers, has recently taken a little nourishment and is able to speak a few words.

Indispensable to the Wholesaler



ANCHOR SANITARY COMPANY
Plumbing and Heating Supplies
123-127 THIRD AVE. Telephone COURT 4011
PITTSBURGH

September 13, 1928.

Domestic Engineering Co.,
1900 Prairie Avenue,
Chicago, Ills.

Gentlemen:

We have been using the Domestic Engineering Catalog Directory ever since it has been published and find it indispensable in serving our trade. The directory is a ready reference for locating manufacturers whose products are not regularly carried in stock.

The only improvement we can suggest is that more manufacturers should cooperate and make it an encyclopedia for the buyers of Plumbing and Heating materials.

Yours very truly,
ANCHOR SANITARY COMPANY
W. L. Endres

WLE.s

Manufacturers who catalog their lines in **Domestic Engineering Catalog Directory** have the assurance that complete and up-to-date descriptive matter of their products is kept constantly before the big buyers throughout the country when they are placing orders.

This service eliminates waste circulation which cannot be avoided in distributing the individual catalog. In fact reliable figures have been compiled showing that an average of 75% of the circulars and other catalog material distributed to wholesalers is discarded.

Any concern making a product used in this industry cannot afford to overlook the efficient and economical service offered by **Domestic Engineering Catalog Directory.**

Details furnished on request

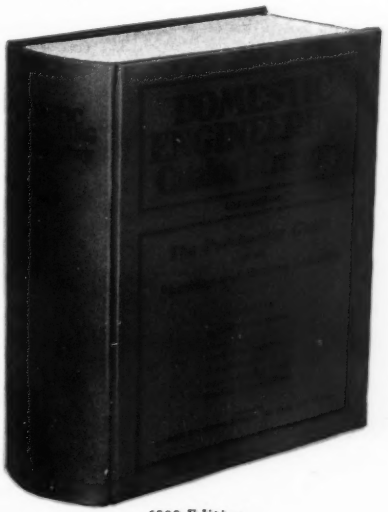
DOMESTIC ENGINEERING COMPANY
1900 PRAIRIE AVENUE CHICAGO, ILLINOIS

The plan of a consolidated catalog as represented by **Domestic Engineering Catalog Directory** is successfully meeting the requirements of the buying power of the plumbing and heating industries.

It serves as a convenient, up-to-date catalog file and complete purchasing guide, bound under a single cover and thoroughly indexed for desk use.

Statistics on file in our office show that over 1300 wholesalers of plumbing and heating supplies make an average of 4000 references daily to this Directory. Many of them find it indispensable in locating quickly their sources of supply.

Opposite is reproduced one of the hundreds of letters we receive from wholesalers expressing appreciation of our Directory service. The only suggestion offered for improvement is that more manufacturers feature their lines in the catalog section.



1928 Edition
Standard Catalog Size
7¾ x 10⅝ Inches
2,000 Pages—10,000 Illustrations

Shaw-Perkins

HIGH CONVECTION

Radiators

For Steam and Hot Water Heating Cooling-Drying and Industrial Applications

Compact – Light in Weight

Sanitary

Heat and Cool Quickly

Several Models – Many Sizes

Made in One Piece Jointless Units as long as 14 Feet

Get the Full Story

SEND FOR CATALOG D

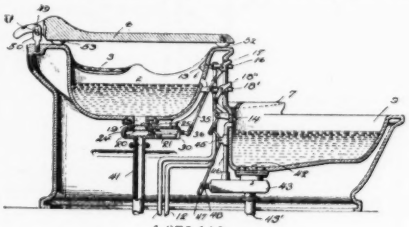
Shaw-Perkins Manufacturing Company

Pittsburgh . Pa.

PATENTS

Plumbing Department

1,676,116. Lavatory Fixture. Errett G. Smith, Washington, D. C. A lavatory fixture comprising a basin provided with a surrounding seat concaved to the contour of

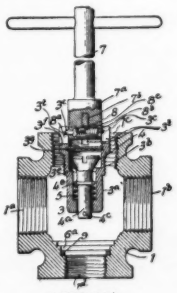


1,676,116.

the thighs of a user when seated thereon, and foot rests located in front of and below the plane of said seat.

* * *

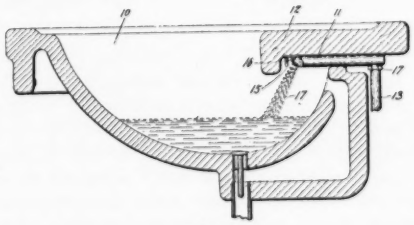
1,675,992. Drain Valve for Lawn-sprinkling Systems. Howard B. Sherman, Battle Creek, Mich., assignor to H. B. Sherman Manufacturing Co., Battle Creek, Mich. In a lawn sprinkling apparatus; the combination of a unit comprising a hollow body provided with openings for connection with a water supply and a sprinkler head and a lower opening for the reception of a drain valve; with a removable drain valve casing in the lower opening of the body having slots in its upper end for the engagement of a tool or wrench, and an internal groove near its upper end adapted to be engaged by said tool for inserting and removing the drain valve when the unit is in position in the ground; said casing having a valve seat below the said slots; an inwardly opening valve in said casing; and a screen in the casing below the slots and above the valve.



1,675,992.

* * *

1,676,035. Nozzle. Henry W. A. Lehnert, New York, N. Y. A fluid delivery nozzle comprising an elongated tubular member having one end closed by a stationary

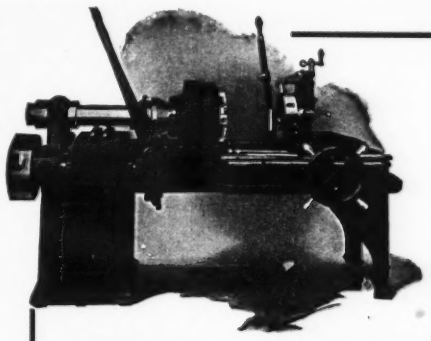


1,676,035.

end wall, a discharge outlet in a side wall adjacent the closed end, a baffle spaced from the end wall and projecting from the side wall opposite the outlet and extending part way across the tubular member, the plane of the baffle intersecting the plane of the outlet on a line substantially removed from the inner edge of the outlet.

* * *

1,676,234. Pendulum or Swinging Flush Valve for Water Closets. Edward H. Gove, Biddeford, Me.; Everard J. Gove, executor of said Edward H. Gove, deceased. In a device of the character described comprising in combination with a valve a one-piece valve-lifting spindle and



PEERLESS B&K DUPLEX P·D·G·C

Are You Satisfied?

Are you getting satisfactory pipe threads?

Do you employ unskilled labor for pipe threading?

Is your production speed satisfactory?

Are your machines always ready for service?

Is your upkeep cost down to the minimum?

Will your machines last a lifetime?

Unless you answer YES in every instance, consult Pipe Threading Machine Headquarters.

BIGNALL & KEELER MACHINE WORKS

of the N. O. Nelson Mfg. Co.

EDWARDSVILLE, ILLINOIS

PEERLESS B&K DUPLEX P·D·G·C

PEERLESS B&K DUPLEX P·D·G·C

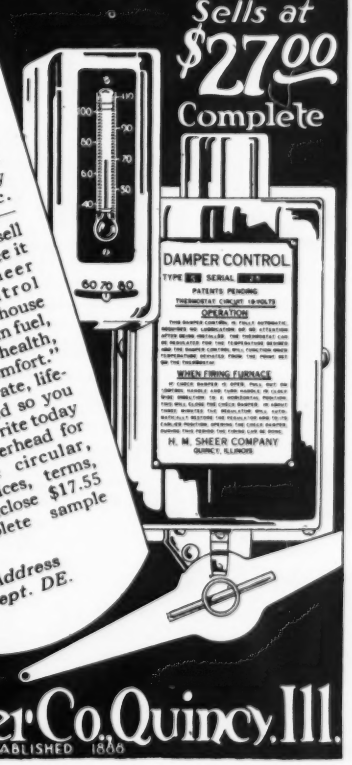
"Sheer Comfort" Control

Sells at $27.00 Complete

"Sheer Comfort"

AN Electric Thermostat Heat Control that makes any furnace automatic. Everybody wants it—and you will want to sell it the minute you see it work. The "Sheer Comfort" Control means efficient house heating, savings in fuel, protection of health, and "Sheer Comfort." Positive, accurate, lifelasting. Priced so you can sell it. Write today on your letterhead for descriptive circular, dealer's prices, terms, etc., or enclose $17.55 for complete sample outfit.

Address Dept. DE.



H. M. Sheer Co. Quincy, Ill.

ESTABLISHED 1888

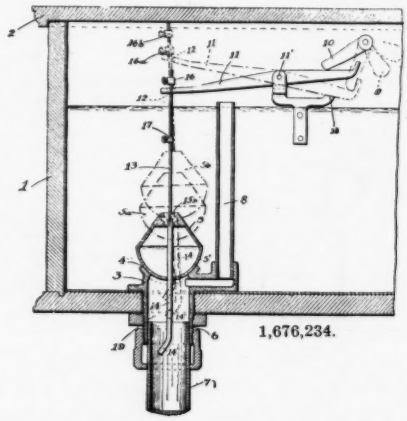
E Z
RADIATOR HANGER
for ALL Tube Type Radiators
The most complete stock on the market—ready for immediate shipment from principal cities. Use this strong, simple, one-bolt hanger. It pays to insist on the E-Z.
HEALY-RUFF CO.
770 Hampden Ave. St. Paul, Minn.
½" PIPE
Style B

Tank Fittings of Quality
1856 "McSHANE" 1928
The ORIGINAL Compound Lever Ball Cock. Elevated, Low-Down, Top and Bottom Supply Tank Levers and Valves.
Our Catalog
McSHANE BELL FOUNDRY CO.
Baltimore, Maryland

Madefor easy and permanent installation from the fine lead that distinguishes all Raymond lead products, the Raymond Roof Flange will save you money not only at installation but all thru the years of its service.
RAYMOND LEAD ROOF FLANGES
Dutch Boy Products
Hoyt Metal Products
Raymond Lead Products
LEAD PIPE, SHEET LEAD, LEAD TRAPS
NATIONAL LEAD COMPANY
900 W. Eighteenth Street CHICAGO

The Wade accessible flushing clean-out extra heavy cast iron floor drain deep water seal trap combination without backwater gate can be installed in ground at any depth and extended upward to any floor level by using manhole clean-out extensions.
WADE IRON SANITARY MFG. CO.
551 Fulton St.
Chicago
Ill.

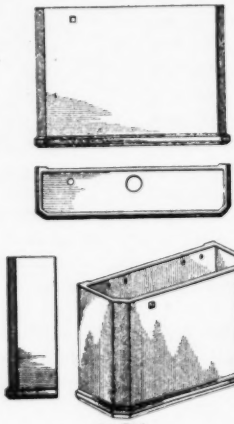
a water-way spindle having a relatively large permissible movement, laterally, when said valve is off its seat, of a valve-lifting lever having a vertically disposed hole near

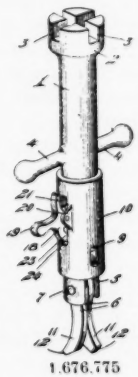


its free end through which said valve-lifting spindle may reciprocate, and means on said valve-lifting spindle, superjacent said valve-lifting lever, whereby said valve may be raised.

* * *

75,721. Closet Tank. John B. Coxon, Kokomo, Ind., assignor to Kokomo Sanitary Pottery Co., Kokomo, Ind. The ornamental design for a closet tank, as shown and described.


75,721.

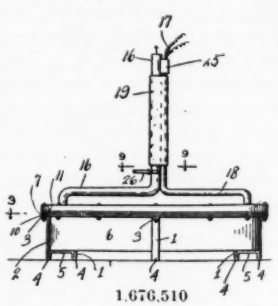

1,676,775.

1,676,775. Plumber's Tool. Thomas P. Doherty, Providence, R. I. A device of the character described, comprising a shaft provided with a handle and having one end thereof slotted, elbow shaped arms pivotally supported by said shaft within the slotted end thereof at points adjacent to the elbows, a sleeve slidably mounted on said shaft, and provided with oppositely positioned openings for the reception of the outturned ends of said arms which extend inwardly of the shaft, whereby the outturned ends of said arms on opposite sides of their pivot points are withdrawn within the circumference of said sleeve when the sleeve is in retracted position and forced outwardly beyond the circumference of said sleeve when the sleeve is forced downwardly upon the shaft.

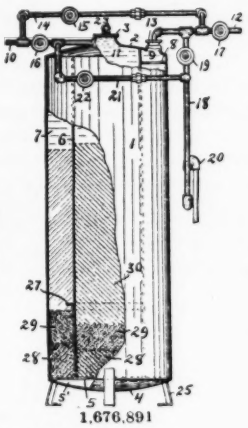
* * *

1,676,510. Electrical Water Heater. Harry C. Welcomer, Steelton, Pa. An electrical heater comprising a series of spaced frame members of general U-shape, each of said members having upright spaced portions and a cross bar disposed above the lower ends of said upright

portions and also having outwardly extending apertured terminals at the upper ends of said upright portions, an annular receptacle arranged in said frame members and on the cross bars thereof and having flanges superposed on said apertured terminals, an annulus superposed on the flanges of the receptacle, means connecting the said terminal portions, flanges and annulus together, means for excluding water from the interior of the receptacle, a dielectric annulus arranged in the annular receptacle and superposed on the bottom thereof, and a heating unit disposed on said dielectric annulus and having terminals carried through an aperture in the first named annulus.



1,676,510



1,676,891

1,676,891. Apparatus for Filtering and Softening Water. Ralph C. Dunkelberg, Fort Wayne, Ind. In apparatus of the class described, a pair of shells concentrically disposed, there being an annular space therebetween; a head closing the upper ends of both shells having a central closed aperture; a head closing the lower end of the outer shell; a perforated plate in the lower end of the outer shell having supporting relations with the inner shell; gravel beds within the lower portions of said shells sustained by said plate; a filter bed within the inner shell overlying the gravel bed therein; a water softening mineral body within the annular space between said shells overlying the gravel bed therein; a perforated annular partition extending between said shells spaced from the uppermost head; a valve controlled water supply pipe having connection through the uppermost head with the innermost shell; a discharge pipe having connection through the uppermost head with the space between said shells; a valve controlled waste pipe in connection with the discharge pipe; a valve controlled by-pass connection between said supply and discharge pipes; and a valve controlled cross-pipe connection, one end of which is connected with said waste pipe and the other end of which is connected with said supply pipe at a point between the valve thereof and its connection with said head.

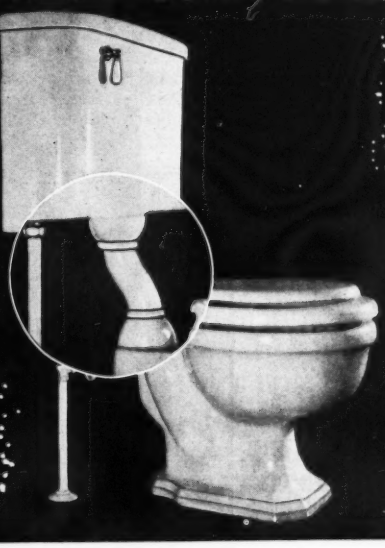
* * *

1,676,430. Flush-Valve Float for Flush Tanks. Edward L. Delany, Brooklyn, N. Y., assignor to Delany Realty Corporation, Brooklyn, N. Y. A flush valve float comprising a hollow body portion of hard rubber having a horizontal annular flange, and a seating surface vulcanized to the lower face of said flange.

* * *

1,676,940. Sanitary Toilet-Seat Cover. Bridget T. Bing, New York, N. Y. A toilet-seat cover of the class described, comprising a substantially U-shaped section, an inner front section, and outer sections between the extremities of said inner section and the extremities of the U-shaped section, said sections being divided by perforated lines extending

STYLE
in closets
ALL WHITE



NOW you can offer the "all-white" closet to your customers and prospects who WANT it for their "all-white" bath-rooms.

BATHWHITE Closet Fittings have a permanent "China-matching" white finish that harmonizes with all types of closets. The finish is guaranteed to keep its color.

The illustration shows a "Standard" closet equipped with BATHWHITE fittings. Many prominent makers have adopted BATHWHITE fittings to supply the popular demand for the "all-white" closet. That's your tip—act on it.

Send in the coupon for information in regard to the profit bringing possibilities of BATHWHITE.

Sold through jobbers everywhere

E. H. Titchener & Co.
126-130 Walnut Street.
BINGHAMTON, N. Y.

A GOOD MOVE

Send in this coupon—today—no obligation to you at all.

Name.....

Address.....

City..... State.....

The Leonard Thermostatic Water Mixing Valve is particularly adapted to bakeries, launderies, bathing pools or all places where large amounts of mixed water must be used. It is positive in action and its use will result in a very noticeable economy.

LEONARD
Thermostatic
Mixing Valve

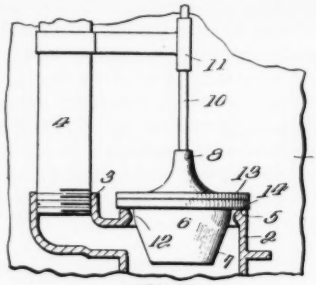
LEONARD - ROCKE COMPANY
Providence, Rhode Island

Hinges of the Better Kind

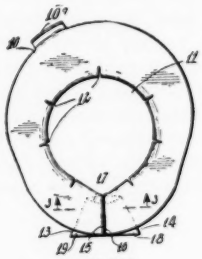
Hinge No. 100—Close-Ruf

GRAND HAVEN BRASS FOUNDRY
Grand Haven, Michigan
Hinges for all types of toilet seats
All hinges can be furnished Crodon Plated if so desired.

from the inner edge to the outer edge thereof and disposed in superimposed relation with said inner front section in



1,676,430

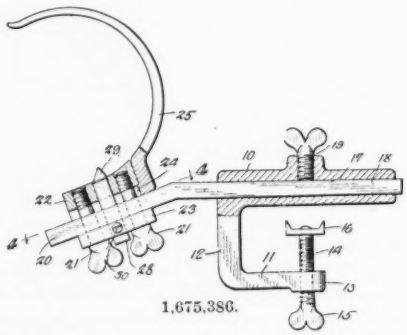


1,676,940.

the bottom portion of said U-shaped section on the top and said outer sections therebetween.

Heating Department

1,675,386. Pipe Cutter. John Schultheiss, Baltimore, Md. In a pipe cutter, a bracket, clamping screws extending through said bracket, a clamping head carried by said



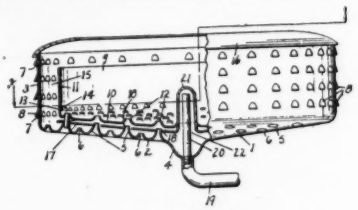
1,675,386.

screws in spaced relation to said bracket, a knife projecting through said head between said screws, and an arcuate guide frame having a foot positioned between said head and bracket and clamped removably on the bracket by said head.

* * *

1,676,080. Liquid-Fuel Burner. Henry A. Davis, Jeffersonville, Ind. In a liquid fuel burner, the combination of an outer burner member comprising a bottom and a side wall, the bottom being inwardly inclined and provided with a central fuel well and with a plurality of upwardly projecting air nozzles and upwardly flanged air inlet openings interspersed between said air nozzles, the side wall having a plurality of air inlet openings therein, an inner burner member comprising a bottom and a side wall spaced from the bottom and side wall of said outer member, the bottom of the inner member having a central opening above said well and a plurality of upwardly projecting jets aligned with said air nozzles, the wall of the inner member having a plurality of openings at the base thereof, the bottom of the outer member having a plurality of air inlets delivering between the side walls of said burner members, a baffle member arranged between said burner members in spaced relation to both and coacting with the bottom of the outer burner member providing a generating and distributing chamber, said baffle member having openings therein to receive said air nozzles, the openings being of a size providing annular ports surrounding the air nozzles, said baffle member having a tubular extension closed at its upper end projecting through the

central opening in said inner member bottom, a fuel supply nozzle disposed centrally of said fuel well and projecting into said baffle member extension, and an annular

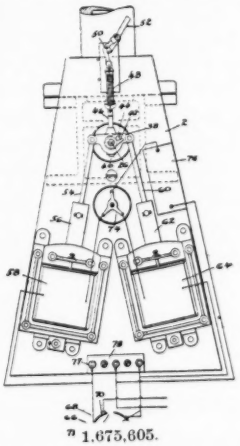


1,676,080.

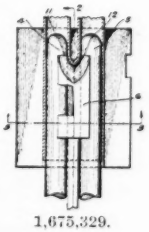
top member extending inwardly from the upper edge of said outer burner member side wall and overhanging the side wall of said inner burner member.

* * *

1,675,605. Heat-Controlling Apparatus. Floyd E. Harris, Flint, Mich. In a regulator for a burner of the type to which fuel and air are supplied by separate conduits provided with valves, means for biasing said valves to one position and thermally controlled means for simultaneously moving said valves to another position, said last named means comprising an electromagnet.



1,675,605.



1,675,329.

1,675,329. Apparatus for Joining Pipes. Benjamin N. Broido, New York, N. Y., assignor to The Superheater Company, New York, N. Y. Apparatus for making pipe structures of the kind described, comprising two parallel cylindrical bars extending into and remaining stationary in the pipes during the process, and a reciprocating male die having grooves slidingly engaging said bars during the process.

* * *

1,675,664. Welding Medium for Aluminum. Wilhelm Reuss, Mannheim, Germany. A soldering or welding medium consisting of a mixture of equal parts of borax, boracic acid and caustic potash.

* * *

1,676,274. Oil Burner. William F. Miller, Buffalo, N. Y. An oil burner, comprising a base member adapted to be supported on the grates of a furnace and having an opening for the passage of air and a rim bounding said opening, a casing disposed below said base plate, a hollow, upright shaft journaled in said casing and extending through the opening in said base member, an atomizing disk carrying fan blades on its underside, applied to the upper end of said shaft, the top surface of said disk being slightly convex and unflanged, means for rotating the shaft, means for forcing oil upwardly through said shaft on to said atomizing disk, and a sleeve applied to said base rim and provided at its upper end and below the

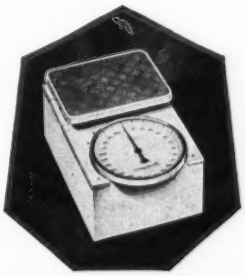
Write Dept. "D" for sample.

YAGER'S SOLDERING SALTS

The easiest way to tin, solder or do any of this type work is with soldering salts that stand alone in their superiority. Yager's Salts are used by the best men everywhere.

ALEX R. BENSON CO., Inc., Hudson, New York
For list of distributors see 1928 McRae Blue Book.
Sales Agency for Canada: Canadian General Electric Co., Ltd., Toronto and Montreal

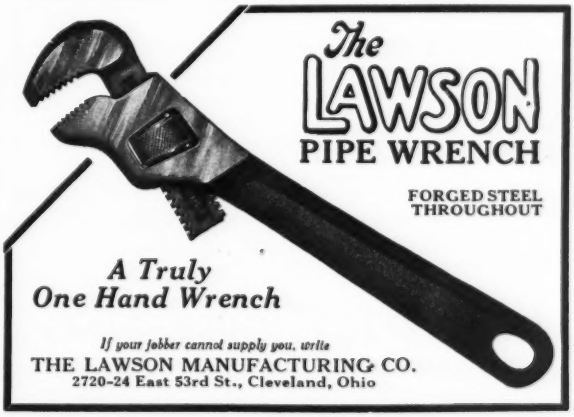
In colors to harmonize
with modern bath rooms



HANSON
WEIGH MASTER
BATH ROOM SCALES

You always make more money on Hanson Scales. Send for literature.

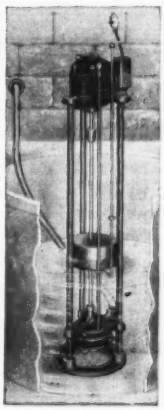
HANSON BROS. SCALE CO. 546 N. Ada St. Chicago



The LAWSON
PIPE WRENCH
FORGED STEEL THROUGHOUT

A Truly One Hand Wrench

If your jobber cannot supply you, write
THE LAWSON MANUFACTURING CO.
2720-24 East 53rd St., Cleveland, Ohio

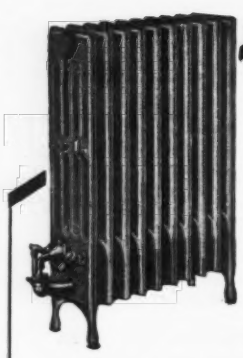


AURORA
AUTOMATIC PIT & CELLAR DRAINAGE PUMP

Most dependable unit to be had

Non-rusting shaft, non-rusting bearing, non-rusting pump proper. Delivers the maximum amount of water a ¼ H. P. motor can pull without overload.

AURORA PUMP COMPANY
AURORA, ILLINOIS
Manufacturers Deep Well Turbines, Centrifugal Pumps, Trench Pumps



Here Is a Complete Heating Plant

The Automatic Gas-Steam Radiator affords a complete heating system that is safe, economical, trouble-free, foolproof and efficient. It will solve the heating situation for many of our customers.

Write for full details

Automatic Gas-Steam Radiator Company
PITTSBURGH, PA.

Know what the drill you buy is going to do!

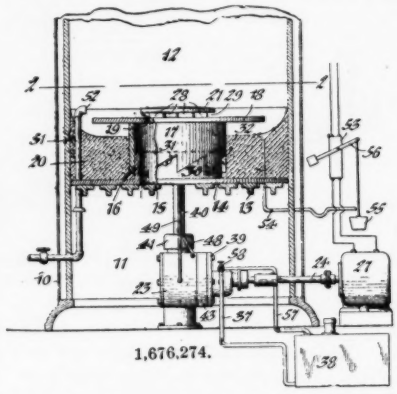
Write for the Goodell-Pratt catalogue today. It tells you just what you can expect. You'll get more. Eleven sizes, 1/8 inch to 7/8 inch.

GOODELL-PRATT COMPANY
61 Wells Street
Greenfield, Mass., U. S. A.

DOMESTIC ENGINEERING's Retail Advertising Service makes advertising easy for you—all you do is clip the copy from your copy of the paper and hand it, with the cut we send you, to your newspaper. Only $4.20 for 12 illustration cuts. Clip this, attach your check for $4.20 and mail today.

DOMESTIC ENGINEERING
1900 PRAIRIE AVENUE, CHICAGO, ILLINOIS

atomizing disk with a ring, said sleeve being vertically adjustable toward and from said disk to vary the air space

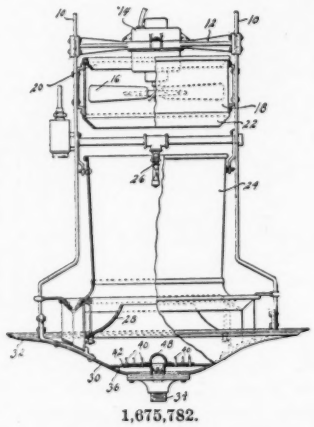


1,676,274.

between it and the sleeve-ring, and the atomizing disk extending outwardly beyond the ring-opening and the fan blades thereof extending into said ring-opening as described above.

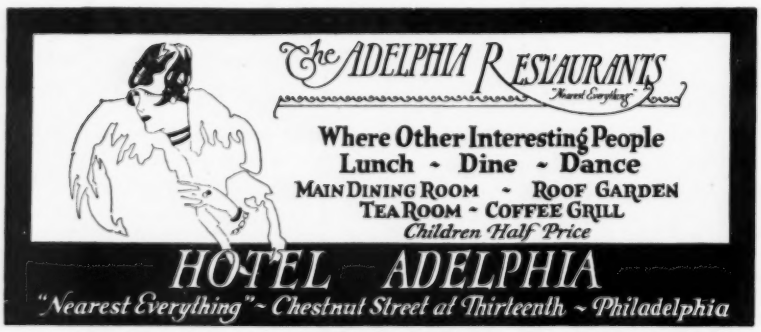
* * *

1,675,782. Humidifier. Joseph Armstrong, Allston, Mass., assignor to American Moistening Company, Boston, Mass. The combination, with a pan and drain, of a lint



1,675,782.

collector comprising a horizontal plate set in the pan in the course of water therein flowing to the drain, with a multiplicity of arresting elements on the plate and distributed through said course, as and for the purpose described.


The ADELPHIA RESTAURANTS
"Nearest Everything"
Where Other Interesting People
Lunch - Dine - Dance
MAIN DINING ROOM - ROOF GARDEN
TEA ROOM - COFFEE GRILL
Children Half Price
HOTEL ADELPHIA
"Nearest Everything" - Chestnut Street at Thirteenth - Philadelphia

CHARLES ELLIS GOODIN, *President-Managing Director* • • • • A. W. BAYLITTS, *Manager*

HOTEL ADELPHIA

Modern in every sense of the word, offers all of the "added features" which make up perfect service—bath with every room, circulating ice water, bed lamps, morning newspapers at "no higher" rates.

CLASSIFIED ADVERTISING

8 cents for each word including heading and address. Count seven words for keyed address. Minimum $2.00 for each insertion. One inch $4.00. Cash must accompany order. Copy should reach us eight days in advance.

Situations Open

IF YOU HAVE HAD PRACTICAL EXperience in plumbing and heating and want full time position in a consulting capacity, address Key 213, "Domestic Engineering," 1900 Prairie Ave., Chicago.

Manufacturer of pipe nipples desires to make connection with reliable manufacturers' agents, in all states, to sell nipples direct to plumbing and heating contractors. Extremely liberal commission and exclusive agency agreement. State exact territory now covering and how often. Give lines now handling and extent of acquaintanceship with plumbing and heating contractors. Also give age. Territory being allotted fast so write at once.

Address Key 203, "Domestic Engineering", 1900 Prairie Ave., Chicago

Situations Wanted

SALESMAN WITH EIGHT YEARS' experience calling on plumbing and heating trade in New Jersey desires to make connections with manufacturer selling to the jobbing trade in New Jersey preferred. Can furnish first class references. Address Key 219, "Domestic Engineering," 1900 Prairie Ave., Chicago.

Position Wanted — Sales or Branch Manager, for twelve years selling plumbing and heating trade in southwest. Twenty years varied experience in the industry. Address Key 220, "Domestic Engineering", 1900 Prairie Ave., Chicago.

Lines to Handle

WANTED—WE HAVE AN EXCELlent proposition for a state representative to handle an old well advertised line of pumps, water systems and water softeners. Give experience in first letter. Address Key 152, "Domestic Engineering," 1900 Prairie Ave., Chicago.

Miscellaneous

STOP "GUESSTIMATING"
Avoid Errors and Omissions. Our
Plumbers' Estimate Sheets
will SAVE Time and Money.
100 leaves in a book—4½x10
1 Book, $1.25 5 Books, $5.
via Ins. Parcel Post same day we get order.
LOUIS FINK & SONS CO., Printers
Time Sheets, Job Tickets, Letter Heads, etc.
School Bldg. Laurel Springs, N. J.
In Business Thirty Years. Noted for Quick Service

We offer an electrically controlled automatic regenerating water softener of exceptionally simple design and construction—ONLY TWO ESSENTIAL MOVING PARTS—no motor, reducing gears, cams or parts to get out of order. Manufacturing cost 30 to 50 per cent less than other automatic softeners on the market. Covered by Patent No. 1654537 and other well seasoned pending patented applications having unusually broad claims. Manufacturing rights available to responsible parties under a licensed arrangement. Write to 3421 Bigelow Blvd., Pittsburgh, Penna.

PLUMBERS' BIN LABELS

1½ x ¾
RED. ELLS

Send for samples and prices of card holders, bin labels and stop valve tags, and free booklets: "How to Lay Out the Plumbing Shop" and "How to Train the Apprentice Boys." Haddon Bin Label Co., Haddon Heights, N. J.

The Most Reliable
PIPE COUPLING BUYERS
in The Country

Write us about your surplus pipe couplings.

CAPITOL MFG. & SUPPLY CO.
550 Nicholas St., Columbus, O.

Books for Your Trade Library

MERCHANDISING THE PLUMBING BUSINESS. By Karl W. Zoeller. A treatise on merchandising as applied to the plumbing and heating business, that should be read by every plumber, contractor or jobbing plumber. The subject is completely covered by the twenty-six chapters, and in a manner making it interesting and easy to read. It contains many valuable suggestions on Window Display, Showrooms, Advertising, etc. No matter how large or small your business, you need this book. Size 4½x6¾ inches. Over 100 pages. Price, postpaid, $1.50.

PRACTICE AND THEORY OF SANITARY PLUMBING. By R. M. Starbuck. Vol. I. Contains 400 questions with complete and comprehensive answers, covering everything the plumber should know regarding drainage and latest requirements in plumbing practice. Explains technical terms, gives rules and tables and is fully illustrated. So popular has this book become that the 12th edition has been published. The combined set of four volumes makes a complete preparation for Board and Health and union examinations. Size 6x9 in. Cloth. Price $2.00 per volume, or $7.00 for the four volumes.

Books Sent Parcel Post Prepaid

Domestic Engineering
1900 Prairie Avenue, Chicago

Flush Valve Guide, Sectional

Pat'd 8-26-24

Adjustable to Any Size.

TWO LEADERS

With a National Reputation and many other exclusive items

For the Live Wire Plumbing Jobber

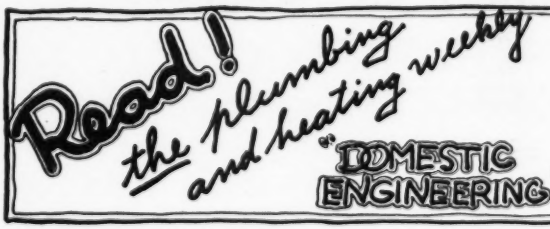
WRITE FOR PRICES

Leader Specialty Co., Inc., Indianapolis, Ind.

Closet Spud and Nipple Holder

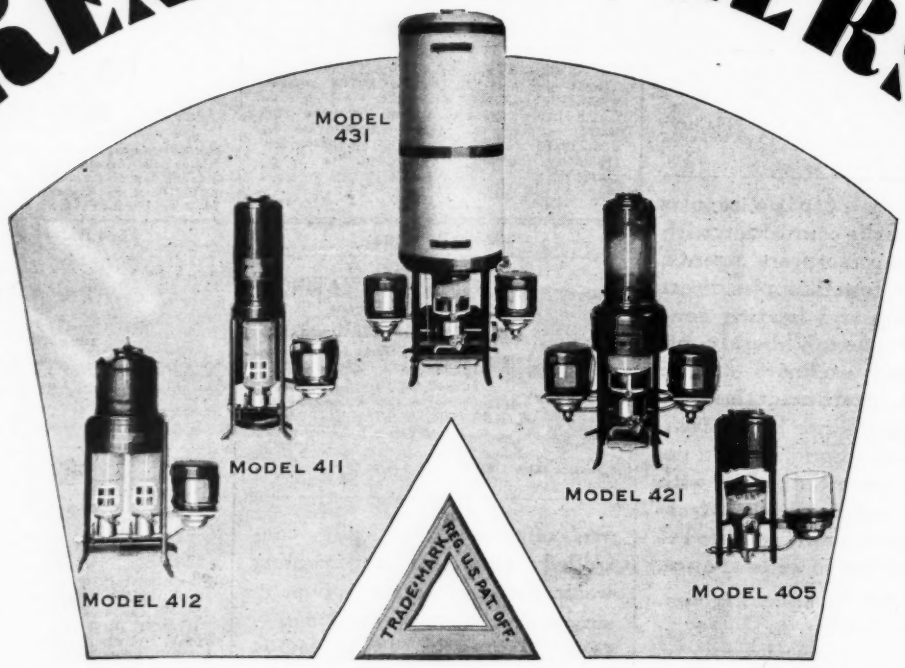
Pat'd 1-5-24

Handiest Internal Gripping Tool.



4c an issue—you might say almost nothing, yet dollars worth of new ideas, news, pictures of your outings and conventions, and a market section that is saving plumbers money in all parts of the country. Ask yourself, can you afford not to be a reader—then forward your subscription.

REAL PARTNERS!



They help you get the hard-to-get business

A GOOD PARTNER in your business helps you get extra sales. So do Perfection-made Kerosene Water Heaters.

They enable you to sell hot water installations beyond gas mains. And Perfection's method of attaching its heaters to kitchen force pumps extends this market for running hot water even into homes without pressure systems!

Other business follows—piping hot water to bath rooms .... installing bath room fixtures.

Perfection-made Water Heaters uphold your good name. And they have a good name of their own, 40 years old. They are worthy partners. Try them.

PERFECTION STOVE COMPANY
7551 Platt Avenue . Cleveland, Ohio

Sold in Canada by General Steel Wares, Ltd., Toronto, Ontario

PERFECTION

and Puritan Kerosene Water Heaters

PERFECTION STOVE COMPANY
7551 Platt Avenue . . Cleveland, Ohio

Please send free booklet describing Perfection and Puritan Kerosene Water Heaters and their installation.

*Name*_____

*Address*_____

*City*_____ *State*_____

NOW...

Laundry Trays in Beautiful Modern Colors!*

ALBERENE Soapstone fixtures are now produced in green, blue, yellow, pink, and white . . . the same beautiful and durable lacquer finishes as used on modern automobiles . . . prices are only 5% higher than the plain fixtures . . . leading jobbers have them in stock now.

Beautiful appearance in laundry trays no longer means high prices—for this new line gives you a beautiful fixture at a LOW PRICE. For instance, the list price on our regular two-compartment tray is $29.00. The same tray finished in color is only $1.45 extra.

These fixtures are colored on the OUTSIDE ONLY. The inside is the natural Alberene Soapstone—BEAUTY AND PRACTICALITY ARE COMBINED IN ONE FIXTURE.

In selling to speculative builders, you can now meet all their demands for attractive fixtures and make your bids lower than was possible before. The same applies to selling to women.

And don't forget this! Every tray you sell will carry our unconditional guarantee. No "seconds." There will be no comebacks to worry about!

See your jobber or write direct to us for further information.

*The colors carried in stock are green, blue, yellow, pink and white, but on half-carload lots, we will finish the trays in any special color you want—at the same price as standard colors. This gives you a big "talking point" in dealing with speculative builders. It means that you can give them any color they want—at a low price—backed with an unconditional guarantee.

ALBERENE STONE TRADE BEST MARK

Alberene Soapstone fixtures have been tested and approved by Good Housekeeping Institute. Tell this to your women customers . . . they know what it means!

Tested and Approved 2744 Good Housekeeping Institute

THE ALBERENE STONE CO.

153 W. 23rd St., New York City

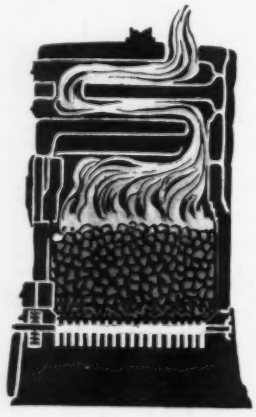
Branch offices in the following cities:

Philadelphia	Pittsburgh	Boston
Richmond	Newark, N. J.	Chicago

Designed To Win Heating Races

Burnham Boilers

That Extra Length of Fire Travel is the Balloon Jib of the Burnham



Like a splendid racer, with all sails set and pulling, the Burnham comes booming down the wind, when it's nip and tuck which boiler will win.

That precious extra length of fire travel is the one more sail that holds the lead on every leg of the course.

More heat, without an ounce more fuel. Less work for the crew, and a big purse to divide between owner and sailing master. That's YOU.

You're sure of the winnings from the crack of the starter's gun . . . just as sure as you are that no other craft is going to have a fire travel sail spread to equal yours.

Have the whole fleet of Burnhams, with a winning entry for every heating race.

A Burnham Entry in Every Class

1—Round Sectional
2—Square Sectional
3—Water Tube Type
4—Big Twin Sectional
5—High Pressure*
6—Junior*
7—Laundry Stove*
8—Smokeless
*For Hot Water Supply

Burnham Boiler Corporation

IRVINGTON, N. Y.

Representatives in all principal Cities in the United States and Canada